EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	myopeptidin	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/10/18 12:36
L2	18790	ischemia and peptide	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/10/18 12:36
L3	768	ischemia.ab. and peptide.ab.	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/10/18 12:36
L4	0	ischemia.ab. and peptide.ab. and repurfusion.ab.	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/10/18 12:37
L5	0	peptide.ab. and repurfusion.ab.	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/10/18 12:37
L6	473	peptide.ab. and reperfusion.ab.	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/10/18 12:37
L7	0	peptide.ab. and "reperfusion.ab. and" ischemia.ab.	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/10/18 12:37
L8	0	peptide.ab. and "reperfusion.ab. and" ischemia.ab.	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/10/18 12:37
L9	258	peptide.ab. and reperfusion.ab. and ischemia.ab.	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/10/18 12:37
L10	3	l9 and dalton$	US-PGPUB; USPAT; DERWENT	ADJ	ON	2007/10/18 12:38

10567286
File 5:Biosis Previews(R) 1926-2007/Oct W2
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Set Items Description
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Set Items Description
S1 0 MYOPEPTIDIN
S2 396 (CARDIO OR CARDIAC) AND PEPTIDE AND (ISCHEMIA)
S3 20 S2 AND (REDUCE OR ATTENUATE OR ALLEVIATE)
S4 1 ((CARDIO OR CARDIAC)(3W) (PEPTIDE OR POLYPEPTIDE)) AND DALTONS
S5 7598 ((CARDIO OR CARDIAC) AND PEPTIDE)
S6 27 S5 AND DALTON?
S7 1 S6 AND ISCHEMIA
S8 115 COMPOSITION AND PEPTIDE AND NUCLEIC
S9 1 S8 AND CARDI?
S10 3 S8 AND HEART
S11 0 GMGSP OR (GROWTH()STIMULATING()PEPTIDE(3W)MYOCARDIAL)

Set Items Description
S1 0 (GROWTH()STIMULATING()PEPTIDE) AND MYOCARD?
S2 6 (GROWTH()STIMULATING()PEPTIDE)
S3 0 (REPAIR (5W)PEPTIDE) AND (CARDIO OR CARDIAC OR HEART)
S4 14 (REPERFUSION(5W)PEPTIDE) AND (CARDIO OR CARDIAC OR HEART)
S5 2 CARDIAC()DERIVED()PEPTIDE
S6 9 CARDIAC(5W)DERIVED(5W)PEPTIDE
S7 7 S6 NOT S5
S8 31483 (CARDIAC OR CARDIO OR HEART OR MYOCARD?) AND (DALTON OR KD OR D)
S9 907 S8 AND REPERFUSION
S10 18 S9 AND HOMOGEN?
S11 833 HEART AND HOMOGENATE
S12 23 PEPTIDE? AND S11
S13 4 S11 AND DALTON?

? t s3/7/1-20

3/7/1
DIALOG(R)File 5:Biosis Previews(R)

0019860879 BIOSIS NO.: 200700520620
Efficacy of continuous low-dose hANP administration in patients undergoing emergent coronary artery bypass grafting for acute coronary syndrome
AUTHOR: Sezai Akira (Reprint); Hata Mitsurnasa; Wakui Shinji; Niino Tetsuya ; Takayama Tadateru; Hirayarna Atsushi; Saito Satoshi; Minami Kazutorno
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JOURNAL: Circulation Journal 71 (9): p1401-1407 SEP 2007 2007
ISSN: 1346-9843
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background Low-dose continuous human atrial natriuretic %%%peptide%%% (hANP) administration during %%%cardiac%%% surgery has been reported on previously. In the present study, the efficacy of the therapy during emergent coronary artery bypass grafting (CABG) for acute coronary syndrome (ACS) is investigated.Methods and Results One hundred and twenty-four patients patients undergoing emergent CABG for ACS were divided into 2 groups; a group receiving administration of hANP (hANP group) and a group not receiving hANP infusion (non-hANP group). The postoperative peak levels of creatine kinase-MB were significantly lower in the hANP group as compared with those in the non-hANP group. The incidence of postoperative arrhythmias was also significantly lower in the hANP group as compared with that in the non-hANP group. The postoperative brain natriuretic %%%peptide%%% was significantly lower in the hANP group as compared with that in the non-hANP group until I year after the operation. The free-rate of %%%cardiac%%% events after the operation was also significantly higher in the hANP group as compared with that in the non-hANP group.Conclusions It is therefore considered that hANP might not only be effective for overcoming some major shortcomings of cardiopulmonary bypass, but also might be effective to %%%attenuate%%% %%%ischemia%%%-reperfusion injury, protect the myocardium, have an anti-arrhythmic effect, and suppress left ventricular remodeling.

3/7/2
DIALOG(R)File 5:Biosis Previews(R)

0019716805 BIOSIS NO.: 200700376546
Potent mitochondria-targeted peptides %%%reduce%%% myocardial infarction in rats
AUTHOR: Cho Janghyun; Won Kyungheon; Wu DunLi; Soong Yi; Liu Shaoyi; Szeto Hazel H; Hong Mun K (Reprint)
AUTHOR ADDRESS: St Lukes Roosevelt Hosp, Cardiac Catheterizat Lab and Intervent Cardiol, 1111 Amsterdam, New York, NY 10025 USA**USA
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JOURNAL: Coronary Artery Disease 18 (3): p215-220 MAY 2007 2007
ISSN: 0954-6928
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Objective Previously, we demonstrated that a novel opiate %%%peptide%%%, 2',6'-dimethyl-tyrosine-D-Arg-Phe-Lys-NH2, provided cardioprotection against myocardial stunning in vivo. We subsequently showed that this %%%peptide%%% targeted mitochondria and can scavenge reactive oxygen species. The objective of this study was to determine the role of opioid versus antioxidant activity in cardioprotection. Methods We compared two mitochondria-targeted %%%peptide%%% analogs that lacked opioid activity: SS-31 (D-Arg-2',6'-dimethyl-tyrosine-Lys-Phe-NH2) and SS-20 (Phe-D-Arg-Phe-Lys-NH2). They differ in that only SS-31 has scavenging ability. Rats (n=8/group) were randomized to SS-31, SS-20 or placebo. The drugs (3 mg/kg) or saline was administered intraperitoneally 30 min before ligation of the left anterior descending artery for 60 min, and another dose given intraperitoneally 5 min before reperfusion for 60 min. Study endpoints included myocardial infarct size, %%%cardiac%%%

arrhythmia and myocardial lipid peroxidation. Results The area at risk was similar among the groups. The infarct area/area at risk, however, was significantly smaller in the treatment groups (53.9 +/- 1.1% in SS-31 group, 47.1 +/- 1.4% in SS-20 group, versus 59.9 +/- 1 % in the controls, P < 0.01). Lipid peroxidation was significantly reduced by both SS-31 and SS-20 treatment. Arrhythmia occurred only during the early period of coronary occlusion and was less frequent and less severe in the %%%peptide%%% treatment groups than in the controls (Lambeth score 5 points, 3 points, versus 13 points in the controls, P < 0.05). Conclusions This study shows that pretreatment with both SS-31 and SS-20 significantly reduced myocardial lipid peroxidation and infarct size in %%%ischemia%%%-reperfusion injury, and suggests that the %%%cardio%%% protective properties of 2',6'-dimethyl-tyrosine-D-Arg-Phe-Lys-NH2 was primarily mediated by its antioxidant properties. As SS-20 does not scavenge reactive oxygen species, it most likely reduces reactive oxygen species production during %%%ischemia%%%-reperfusion. Coron Artery Dis 18:215-220 (C) 2007 Lippincott Williams & Wilkins.

3/7/3
DIALOG(R)File 5:Biosis Previews(R)

19311616 BIOSIS NO.: 200600657011
Urocortin inhibits Beclin1-mediated autophagic cell death in %%%cardiac%%% myocytes exposed to ischaemia/reperfusion injury
AUTHOR: Valentim Lauren; Lawrence Kevin M; Townsend Paul A; Carroll Christopher J; Soond Surinder; Scarabelli Tiziano M; Knight Richard A; Latchman David S; Stephanou Anastasis (Reprint)
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JOURNAL: Journal of Molecular and Cellular Cardiology 40 (6): p846-852 JUN 2006 2006
ISSN: 0022-2828
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Autophagy is known to be a feature of cardiorryopathies and chronic ischaemia. Here we demonstrate that autophagy is also induced by a single cycle of ischaemia/reperfusion (I/R in neonatal and adult rat %%%cardiac%%% myocytes). Consistent with the critical role for Beclin 1 in autophagocytosis, reduction of Beclin 1 expression in %%%cardiac%%% myocytes by RNAi reduces I/R-induced autophagy and this is associated with enhanced cell survival. Autophagy is also reduced by urocortin, an endogenous %%%cardiac%%% %%%peptide%%% which we have previously shown to %%%reduce%%% other forms of myocyte cell death induced by I/R. The inhibition of autophagy by urocortin is mediated in part by inhibition of Beclin 1 expression, an effect which is mediated by activation of the PI3 kinase/Akt pathway but which does not involve activation of p42/p44 MAPK.

3/7/4
DIALOG(R)File 5:Biosis Previews(R)

19010812 BIOSIS NO.: 200600356207
B-type natriuretic %%%peptide%%% identifies silent myocardial ischaemia in stroke survivors
AUTHOR: Wong K Y K (Reprint); McSwiggan S; Kennedy N S J; MacWalter R S; Struthers A D
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JOURNAL: Heart (London) 92 (4): p487-489 APR 2006 2006
ISSN: 1355-6037
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Objective: To test the hypothesis that B-type natriuretic %%%peptide%%% (BNP) predicts reversible myocardial ischaemia in stroke survivors who do not have chest pain or previous myocardial infarction.Methods: 56 stroke survivors (mean (SE) age 68 (8) years) underwent tetrofosmin myocardial perfusion scanning with dipyridamole as the stressor. The degree of ischaemia was assessed by a scoring system (out of 64) by an experienced observer blinded to the results of BNP.Results: In the whole cohort, BNP was significantly correlated with the degree of myocardial ischaemia on stress scanning (Spearman's r = -0.475, p < 0.001). BNP also correlated with the degree of reversible ischaemia (stress score 2 rest score; Spearman's r = 0.28, two tailed p = 0.049). In the cohort who did not have left ventricular systolic dysfunction (n = 44), BNP remained higher in patients with relevant myocardial ischaemia (mean (SE) BNP 20.9 pg/ml, 95% confidence interval (CI) 15.2 to 26.5 v 12.2 pg/ml, 95% CI 5.95 to 18.5; p = 0.046); 33 of the 44 patients had no chest pain or history of myocardial infarction. The relation between resting BNP and both inducible ischaemia and dipyridamole stress score remained significant (Spearman's r = 0.37 and -0.38, respectively).Conclusions: BNP correlates with the degree of reversible myocardial ischaemia in patients who do not have chest pain or a history of myocardial infarction or evidence of left ventricular systolic dysfunction. Stroke survivors with a high BNP deserve further investigations to rule out significant reversible myocardial ischaemia, in order to %%%reduce%%% their risk of %%%cardiac%%% death.

3/7/5
DIALOG(R)File 5:Biosis Previews(R)

18948642 BIOSIS NO.: 200600294037
Treatment with the gap junction modifier rotigaptide (ZP123) reduces infarct size in rats with chronic myocardial infarction
AUTHOR: Haugan Ketil; Marcussen Niels; Kjolbye Anne Louise; Nielsen Morien Schak; Hennan James K; Petersen Jorgen Soberg (Reprint)
AUTHOR ADDRESS: Zealand Pharma AS, Dept Pharmacol, Smedeland 26B, DK-2600 Glostrup, Denmark**Denmark
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JOURNAL: Journal of Cardiovascular Pharmacology 47 (2): p236-242 FEB 2006 2006
ISSN: 0160-2446
DOCUMENT TYPE: Article

RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Treatment with non-selective drugs (eg, long-chain alcohols, halothane) that %%%reduce%%% gap junction intercellular communication (GJIC) is associated with reduced infarct size after myocardial infarction (MI). Therefore, it has been suggested that gap Junction intercellular communication stimulating compounds may increase infarct size. The antiarrhythmic %%%peptide%%% analogue rotigaptide (ZP123) increases %%%cardiac%%% gap junction intercellular communication and the purpose of the present study was to examine the effects of rotigaptide treatment on infarct size. Myocardial infarction was induced in male rats by ligation of the left anterior descending artery (LAD). Rats (n = 156) were treated with rotigaptide at three dose levels or vehicle from the onset of %%%ischemia%%% and for 3 weeks following LAD occlusion. Infarct size was determined using histomorphometry after 3 weeks treatment. Rotigaptide treatment producing steady state plasma levels of 0.8 +/- 0.1, 5.5 +/- 0.5, and 86 +/- 8 nmol/L had no effect on mortality, but reduced infarct size to 90 +/- 10% (P = 0.41), 67 +/- 7% (P = 0.005), and 82 +/- 7% (P = 0.13), respectively relative to vehicle-treated myocardial infarction rats (100 +/- 12%). In contrast to what was predicted, our data demonstrates that rotigaptide treatment was associated with a significant infarct size reduction. We conclude that whereas treatment with non-selective inhibitors of gap junction intercellular communication cause a reduction in infarct size, this information cannot be extrapolated to the effects of compounds that selectively increase gap junction intercellular communication.

3/7/6
DIALOG(R)File 5:Biosis Previews(R)

18630441 BIOSIS NO.: 200510324941
%%%Cardiac%%% %%%ischemia%%%-reperfusion injury in mice: Role of the VR1 receptor
AUTHOR: Wang Lihong (Reprint); Wang Donna H; Wang Donna H
AUTHOR ADDRESS: Michigan State Univ, Clin Ctr B316, E Lansing, MI 48824 USA **USA
JOURNAL: FASEB Journal 19 (4, Suppl. S, Part 1): pA693 MAR 4 2005 2005
CONFERENCE/MEETING: Experimental Biology 2005 Meeting/35th International Congress of Physiological Sciences San Diego, CA, USA March 31 -April 06, 2005; 20050331
SPONSOR: Amer Assoc Anatomists
Amer Assoc Immunologists
Amer Physiol Soc
Amer Soc Biochem & Mol Biol
Amer Soc Investigat Pathol
Amer Soc Nutr Sci
Amer Soc Pharmacol & Expt Therapeut
Int Union Physiol Sci
ISSN: 0892-6638
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Vanilloid receptor-1 (VRI) is expressed in sensory nerve endings

of the heart and activated by myocardial %%%ischemia%%%. To test the hypothesis that VRI plays a protective role in %%%cardiac%%% %%%ischemia%%%-reperfusion injury, isolated hearts from gene-targeted VR1-null mutant (Vr1(-/-)) and wildtype mice were perfused in a Langendorff apparatus and subjected to %%%ischemia%%% and reperfusion. Left ventricular developed pressure, end-diastolic pressure, and coronary flow wereassessed in the presence or absence of a VRI antagonist, capsazepine, calcitonin-gene related %%%peptide%%% (CGRP), or a CGRP receptor antagonist (CGRP 8-37). All these parameters were impaired in Vr1(-/-) hearts compared to wild-type hearts. Acute blockade of the VRI with capsazepine caused a more profoundimpairment of these parameters in wild-type hearts compared to Vr1(-/-) hearts. CGRP improved %%%cardiac%%% function indistinctively in wild-type and Vr1(-/-) hearts but CGRP 8-37 had minimal effects in either group. Therefore, deletion of VRI gene leads to reversible impairment of %%%cardiac%%% function, indicating a protective role of this receptor in %%%cardiac%%% %%%ischemia%%% reperfusion injury possibly independent of CGRP release from sensory nerves. Attenuated impairment of %%%cardiac%%% function in Vr1(-/-)hearts compared to wild-type hearts after capsazepine indicates that developmental compensation may occurto %%%alleviate%%% damage caused by the lack of VR1.

3/7/7
DIALOG(R)File 5:Biosis Previews(R)

18530369 BIOSIS NO.: 200510224869
Protein kinase C beta II %%%peptide%%% inhibitor exerts cardioprotective effects in rat %%%cardiac%%% %%%ischemia%%%/reperfusion injury
AUTHOR: Omiyi Didi; Brue Richard J; Taormina Philip; Harvey Margaret; Atkinson Norrell; Young Lindon H (Reprint)
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JOURNAL: Journal of Pharmacology and Experimental Therapeutics 314 (2): p 542-551 AUG 2005 2005
ISSN: 0022-3565
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: %%%Ischemia%%% followed by reperfusion (I/R) in the presence of polymorphonuclear leukocytes (PMNs) results in a marked %%%cardiac%%% contractile dysfunction. A cell-permeable protein kinase C (PKC) beta II %%%peptide%%% inhibitor was used to test the hypothesis that PKC beta II inhibition could %%%attenuate%%% PMN-induced %%%cardiac%%% dysfunction by suppression of superoxide production from PMNs and increase NO release from vascular endothelium. The effects of the PKC beta II %%%peptide%%% inhibitor were examined in isolated ischemic (20 min) and reperfused (45 min) rat hearts with PMNs. The PKC beta II inhibitor (10 mu M; n = 7) significantly attenuated PMN-induced %%%cardiac%%% dysfunction compared with I/R hearts (n = 9) receiving PMNs alone in left ventricular developed pressure (LVDP) and the maximal rate of LVDP (+ dP/dt(max)) %%%cardiac%%% function indices (p < 0.01). The PKC beta II inhibitor at 10 mu M significantly increased endothelial NO release from a basal value of 1.85 +/- 0.18 pmol NO/mg tissue to 3.49 +/- 0.62 pmol NO/mg tissue

from rat aorta. It also significantly inhibited superoxide release (i.e., absorbance) from N-formyl-L-methio-nyl-L-leucyl-L-phenylalanine-stimulated rat PMNs from 0.13 +/- 0.01 to 0.02 +/- 0.004 (p < 0.01) at 10 mu M. Histological analysis of the left ventricle of representative rat hearts from each group showed that the PKC beta II %%%peptide%%% inhibitor-treated hearts experienced a marked reduction in PMN vascular adherence and infiltration into the postreperfused %%%cardiac%%% tissue compared with I/R + PMN hearts (p < 0.01). These results suggest that the PKC beta II %%%peptide%%% inhibitor attenuates PMN-induced post-I/R %%%cardiac%%% contractile dysfunction by increasing endothelial NO release and by inhibiting superoxide release from PMNs.

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DIALOG(R)File 5:Biosis Previews(R)

18498563 BIOSIS NO.: 200510193063
Protein kinase C-zeta inhibition exerts cardioprotective effects in %%%ischemia%%%-reperfusion injury
AUTHOR: Phillipson Aisha; Peterman Ellen E; Taormina Philip Jr; Harvey Margaret; Brue Richard J; Atkinson Norrell; Omiyi Didi; Chukwu Uchenna; Young Lindon H (Reprint)
AUTHOR ADDRESS: Philadelphia Coll Osteopath Med, Dept Pathol Microbiol and Immunol, 4170 City Ave, Philadelphia, PA 19131 USA**USA
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JOURNAL: American Journal of Physiology - Heart and Circulatory Physiology 289 (2): pH898-H907 AUG 2005 2005
ISSN: 0363-6135
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: %%%Ischemia%%% followed by reperfusion (I/R) in the presence of polymorphonuclear leukocytes (PMNs) results in marked %%%cardiac%%% contractile dysfunction. A cell-permeable PKC-zeta %%%peptide%%% inhibitor was used to test the hypothesis that PKC-zeta inhibition could %%%attenuate%%% PMN-induced %%%cardiac%%% contractile dysfunction by suppression of superoxide production from PMNs and increase nitric oxide (NO) release from vascular endothelium. The effects of the PKC-zeta %%%peptide%%% inhibitor were examined in isolated ischemic (20 min) and reperfused (45 min) rat hearts reperfused with PMNs. The PKC-zeta inhibitor (2.5 or 5 mu M, n = 6) significantly attenuated PMN-induced %%%cardiac%%% dysfunction compared with I/R hearts (n = 6) receiving PMNs alone in left ventricular developed pressure (LVDP) and the maximal rate of LVDP (+dP/dt(max)) %%%cardiac%%% function indexes (P < 0.01), and these cardioprotective effects were blocked by the NO synthase inhibitor, N-G-nitro-L-arginine methyl ester (50 mu M). Furthermore, the PKC-zeta inhibitor significantly increased endothelial NO release 47 +/- 2% (2.5 mu M, P < 0.05) and 54 +/- 5% (5 mu M, P < 0.01) over basal values from the rat aorta and significantly inhibited superoxide release from phorbol-12-myristate-13-acetate-stimulated rat PMNs by 33 +/- 12% (2.5 mu M) and 40 +/- 8% (5 mu M) (P < 0.01). The PKC-zeta inhibitor significantly attenuated PMN infiltration into the myocardium by 46-48 +/- 4% (P < 0.01) at 2.5 and 5 mu M, respectively. In conclusion, these results suggest that the PKC-zeta %%%peptide%%% inhibitor attenuates

PMN-induced post-I/R %%%cardiac%%% contractile dysfunction by increasing endothelial NO release and by inhibiting superoxide release from PMNs thereby attenuating PMN infiltration into I/R myocardium.

3/7/9
DIALOG(R)File 5:Biosis Previews(R)

18318125 BIOSIS NO.: 200510012625
Ischemic preconditioning of remote organs attenuates gastric %%%ischemia%%% -reperfusion injury through involvement of prostaglandins and sensory nerves
AUTHOR: Brzozowski Tomasz; Konturek Peter C; Konturek Stanislaw J (Reprint) ; Pajdo Robert; Kwiecien Slawornir; Pawlik Michal; Drozdowicz Danuta; Sliwowski Zbigniew; Pawlik Wieslaw W
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JOURNAL: European Journal of Pharmacology 499 (1-2): p201-213 SEP 19 04 2004
ISSN: 0014-2999
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Limitation of the stomach damage by its earlier brief %%%ischemia%%% and reperfusion before prolonged %%%ischemia%%% is defined as gastric ischemic preconditioning but whether such brief %%%ischemia%%% of remote organs like heart or liver can also %%%attenuate%%% the gastric damage caused by longer and severe %%%ischemia%%%-reperfusion remains unknown. The %%%cardiac%%%, hepatic and gastric preconditioning were induced by brief %%%ischemia%%% (occlusion of coronary, hepatic and celiac arteries twice for 5 min) applied 30 min before 3 h of %%%ischemia%%%/reperfusion. Standard 3 h %%%ischemia%%%-reperfusion of the stomach produced numerous gastric lesions, decreased gastric blood flow and mucosal prostaglandin E, generation and increased expression and plasma release of interleukin-1beta and tumor necrosis factor-alpha (TNF-alpha). These effects were significantly attenuated by brief %%%cardiac%%%, hepatic and gastric preconditioning which upregulated cyclooxygenase-2 mRNA but not cyclooxygenase-1 mRNA. The protective effects of brief gastric, %%%cardiac%%% and hepatic preconditioning were attenuated by selective cyclooxygenase-1 and cyclooxygenase-2 inhibitors and capsaicin denervation. We conclude that brief %%%ischemia%%% of remote preconditioning such as heart or liver protects gastric mucosa against severe %%%ischemia%%%-reperfusion-induced gastric lesions as effectively as local preconditioning of the stomach itself via the mechanism involving prostaglandin derived from cyclooxygenase-1 and cyclooxygenase-2 and the activation of sensory nerves releasing calcitonin gene-related %%%peptide%%% (CGRP) combined with the suppression of interleukin-1beta and TNF-alpha expression and release.

3/7/10
DIALOG(R)File 5:Biosis Previews(R)

17773717 BIOSIS NO.: 200400154474
Reduction of muscarinic K+ channel activity by transferrin in ischemic rat atrial myocytes.
AUTHOR: Park Kyeong Tae; Kang Dawon; Han Jaehee; Park Jae-Yong; Hur Chang-Gi; Hong Seong-Geun (Reprint)
AUTHOR ADDRESS: Department of Physiology, College of Medicine, Gyeongsang National University, 90 Chilam-dong, Jinju, 660-751, South Korea**South Korea
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JOURNAL: Korean Journal of Physiology & Pharmacology 7 (6): p333-339 December 2003 2003
MEDIUM: print
ISSN: 1226-4512
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: It has been demonstrated that an unidentified cytosolic factor(s) reduces KACh channel function. Therefore, this study attempted to elucidate the cytosolic factor. Fresh cytosol isolated from normal heart (FC) depressed the KACh channel activity, but cytosol isolated from the ischemic hearts (IC) did not modulate the channel function. Electrophorectic analysis revealed that a protein of apprx80 kDa was markedly reduced or even lost in IC. By using %%%peptide%%% sequencing analysis and Western blot, this 80 kDa protein was identified as transferrin (receptor-mediated Fe3+ transporter, 76 kDa). Direct application of transferrin (100 nM) to the cytoplasmic side of inside-out patches decreased the open probability (Po, 12.7+-6.4%, n=4) without change in mean open time (tauo, 98.5+-1.3%, n=4). However, the equimolar apotransferrin, which is free of Fe3+, had no effect on the channel activity (N*Po, 129.1+-13.5%, n=3). Directly applied Fe3+ (100 nM) showed results similar to those of transferrin (N*Po: 21.1+-3.9%, n=5). However Fe2+ failed to %%%reduce%%% the channel function (N*Po, 106.3+-26.8%, n=5). Interestingly, trivalent cation La3+ inhibited N*Po of the channel (6.1+-3.0%, n=3). Taken together, these results suggest that Fe3+ bound to transferrin can modulate the KACh channel function by its electrical property as a polyvalent cation.

3/7/11
DIALOG(R)File 5:Biosis Previews(R)

17038889 BIOSIS NO.: 200200632400
Anti-arrhythmic %%%peptide%%% N-3-(4-hydroxyphenyl)propionyl Pro-Hyp-Gly-Ala-Gly-OH reduces dispersion of action potential duration during %%%ischemia%%%/reperfusion in rabbit hearts
AUTHOR: Kjolbye Anne Louise (Reprint); Holstein-Rathlou Niels-Henrik; Petersen Jorgen Soberg
AUTHOR ADDRESS: Zealand Pharma, Smedeland 26 B, DK-2600, Glostrup, Denmark, Denmark**Denmark
JOURNAL: Journal of Cardiovascular Pharmacology 40 (5): p770-779 November 2002 2002 2002
MEDIUM: print
ISSN: 0160-2446
DOCUMENT TYPE: Article

RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: During %%%ischemia%%%, %%%cardiac%%% gap junctions close and neighboring cells uncouple. This leads to slow conduction, increased dispersion of APD90 (duration from action potential beginning to 90% of repolarization), nonuniform anisotropy, and unidirectional conduction block, all of which favor the induction of reentry arrhythmias. It has been suggested that anti-arrhythmic peptides increase gap junction conductance during states of reduced coupling. The aim of this study was to test the effect of the anti-arrhythmic %%%peptide%%% N-3-(4-hydroxyphenyl)propionyl Pro-Hyp-Gly-Ala-Gly-OH (HP-5) (10-10 M) on dispersion of epicardial APD90 during both normokalemic and hypokalemic %%%ischemia%%%/reperfusion in isolated perfused rabbit hearts. HP-5 did not affect average APD90, heart rate, left ventricular contractility (LVP dP/dtmax), or mean coronary flow. HP-5 significantly reduced the epicardial APD90 dispersion during hypokalemic %%%ischemia%%% (HP-5 treated: 24.1+-3.4 ms, untreated: 33.9+-3.1 ms, $p<0.05$ versus untreated) and during normokalemic reperfusion but not during normokalemic %%%ischemia%%% or control conditions. In addition, among untreated hearts subjected to hypokalemic %%%ischemia%%%/reperfusion, seven of 10 developed ventricular fibrillation, whereas only three of nine hearts perfused with HP-5 developed ventricular fibrillation. These results show that HP-5 is able to %%%reduce%%% APD90 dispersion during hypokalemic %%%ischemia%%% in rabbit hearts.

3/7/12
DIALOG(R)File 5:Biosis Previews(R)

16212222 BIOSIS NO.: 200100384061
Structure-activity relationships of novel peptides related to the antiarrhythmic %%%peptide%%% AAP10 which %%%reduce%%% the dispersion of epicardial action potential duration
AUTHOR: Grover Rajiv; Dhein Stefan (Reprint)
AUTHOR ADDRESS: Institute of Pharmacology, University of Halle, Magdeburgerstr. 4, 06097, Halle, Germany**Germany
JOURNAL: Peptides (New York) 22 (7): p1011-1021 July, 2001 2001
MEDIUM: print
ISSN: 0196-9781
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We report the first study on short %%%peptide%%% structure-activity relationships (SAR) for the antiarrhythmic %%%peptide%%% AAP10 and its putative receptor. Synthetic improvements on the natural antiarrhythmic %%%peptide%%% AAPnat (H-Gly-Pro-Hyp-Gly-Ala-Gly) isolated from bovine atria led us to the synthesis of our lead molecule AAP10 (H-Gly-Ala-Gly-Hyp-Pro-Tyr-NH2) which reduces dispersion of epicardial potential duration and acts antiarrhythmically in isolated rabbit hearts. The aim of our study was to elucidate structure-activity relationships for AAP10 based on Langendorff experiments and molecular modeling. Mutation of the amino acid sequence led to 11 different peptides which were tested analogous to the lead molecule. Among these new synthetic peptides various including the

cyclopeptide cAAP10RG, cyclo(CF3C(OH)-Gly-Ala-Gly-Hyp-Pro-Tyr) showed promising activities.

3/7/13
DIALOG(R)File 5:Biosis Previews(R)

16160965 BIOSIS NO.: 200100332804
Caveolin-1 %%%peptide%%% exerts cardioprotective effects in myocardial %%%ischemia%%%-reperfusion via nitric oxide mechanism
AUTHOR: Young Lindon H; Ikeda Yasuhiko; Lefer Allan M (Reprint)
AUTHOR ADDRESS: Dept. of Physiology, Jefferson Medical College, Thomas Jefferson Univ., 1020 Locust St., Philadelphia, PA, 19107-6799, USA**USA
JOURNAL: American Journal of Physiology 280 (6 Part 2): pH2489-H2495 June, 2001 2001
MEDIUM: print
ISSN: 0002-9513
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Caveolin-1 is a protein constituent of cell membranes. The caveolin-1 scaffolding region (residues 82-101) is a known inhibitor of protein kinase C. Inhibition of protein kinase C results in maintained nitric oxide (NO) release from the endothelium, which attenuates %%%cardiac%%% dysfunction after %%%ischemia%%%-reperfusion (I/R). Therefore, we hypothesized that the caveolin-1 scaffolding region of the molecule, termed caveolin-1 %%%peptide%%%, might %%%attenuate%%% postischemia polymorphonuclear neutrophil (PMN)-induced %%%cardiac%%% dysfunction. We examined the effects of caveolin-1 %%%peptide%%% in isolated ischemic (20 min) and reperfused (45 min) rat hearts reperfused with PMNs. Caveolin-1 %%%peptide%%% (165 or 330 mug) given intravenously 1 h before I/R significantly attenuated postischemic PMN-induced %%%cardiac%%% dysfunction, as exemplified by left ventricular developed pressure (LVDP) (P<0.01) and the maximal rate of develped pressure (+dP/dtmax) (P<0.01), compared with I/R hearts obtained from rats given 0.9% NaCl. In addition, caveolin-1 %%%peptide%%% significantly reduced %%%cardiac%%% PMN infiltration from 195+-5 PMNs/mm2 in untreated hearts to 103+-5 and 60+-5 PMNs/mm2 in hearts from 165 and 330 mug caveolin-1 %%%peptide%%%-treated rats, respectively (P<0.01). PMN adherence to the rat coronary vasculature was also significantly reduced in rats given either 165 or 330 mug caveolin-1 %%%peptide%%% compared with rats given 0.9% NaCl (P<0.01). Moreover, caveolin-1 %%%peptide%%%-treated rat aortas exhibited a 2.2-fold greater basal release of NO than vehicle-treated aortas (P<0.01), and this was inhibited by NG-nitro-L-arginine methyl ester. These results provide evidence that caveolin-1 %%%peptide%%% significantly attenuated PMN-induced post-I/R %%%cardiac%%% contractile dysfunction in the isolated perfused rat heart, probably via enhanced release of endothelium-derived NO.

3/7/14
DIALOG(R)File 5:Biosis Previews(R)

15952335 BIOSIS NO.: 200100124174

PR-39, a proline/arginine-rich antimicrobial %%%peptide%%%, exerts cardioprotective effects in myocardial %%%ischemia%%%-reperfusion
AUTHOR: Ikeda Yasuhiko; Young Lindon H; Scalia Rosario; Ross Christopher R; Lefer Allan M (Reprint)
AUTHOR ADDRESS: Department of Physiology, Jefferson Medical College, Thomas Jefferson University, 1020 Locust Street, Philadelphia, PA, 19107-6799, USA**USA
JOURNAL: Cardiovascular Research 49 (1): p69-77 January, 2001 2001
MEDIUM: print
ISSN: 0008-6363
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Objective: PR-39, a proline/arginine-rich antimicrobial %%%peptide%%%, has been shown to inhibit the NADPH oxidase activity of polymorphonuclear leukocytes (PMNs) by blocking assembly of this enzyme. We hypothesized that PR-39 could %%%attenuate%%% PMN-induced %%%cardiac%%% dysfunction by suppression of superoxide production. Methods: We examined the effects of PR-39 in isolated ischemic (20 min) and reperfused (45 min) rat hearts administered PMNs at the onset of reperfusion. Results: PR-39 (4 or 10 mug/ml) given i.v. 30 min prior to %%%ischemia%%%-reperfusion (I-R) significantly improved left ventricular developed pressure (LVDP, P<0.01) and the maximal rate of development of LVDP (i.e. +dP/dt max, P<0.01) compared to I-R hearts obtained from rats given 0.9% NaCl. PR-39-treated PMNs (10 mug/ml) also significantly attenuated %%%cardiac%%% contractile dysfunction after I-R (P<0.01). Superoxide release was significantly reduced (P<0.01) in N-formylmethionyl-leucylphenylalanine stimulated PMNs pretreated with 4 or 10 mug/ml PR-39. PR-39 also significantly attenuated P-selectin expression on the rat coronary microvascular endothelium and CD18 upregulation in rat PMNs. In addition, PR-39 significantly reduced PMN vascular adherence and infiltration into the post-ischemic myocardium. Conclusion: These results provide evidence that PR-39 significantly attenuates PMN-induced %%%cardiac%%% contractile dysfunction in the I-R rat heart at least in part via suppression of superoxide release. This cardioprotection occurred both by inhibition of PMN and endothelial NADPH oxidase.

3/7/15
DIALOG(R)File 5:Biosis Previews(R)

15827514 BIOSIS NO.: 200000545827
C-%%%peptide%%% exerts cardioprotective effects in myocardial %%%ischemia%%%-reperfusion
AUTHOR: Young Lindon H; Ikeda Yasuhiko; Scalia Rosario; Lefer Allan M (Reprint)
AUTHOR ADDRESS: Dept. of Physiology, Jefferson Medical College, Thomas Jefferson Univ., 1020 Locust St., Philadelphia, PA, 19107-6799: Allan.M.Lefer@mail.tju.edu, USA**USA
JOURNAL: American Journal of Physiology 279 (4 Part 2): pH1453-H1459 October, 2000 2000
MEDIUM: print
ISSN: 0002-9513
DOCUMENT TYPE: Article

RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: %%%Ischemia%%% followed by reperfusion in the presence of polymorphonuclear leukocytes (PMNs) results in %%%cardiac%%% dysfunction. C-%%%peptide%%%, a cleavage product of proinsulin to insulin processing, induces nitric oxide (NO)-mediated vasodilation. NO is reported to %%%attenuate%%% %%%cardiac%%% dysfunction caused by PMNs after %%%ischemia%%%-reperfusion (I/R). Therefore, we hypothesized that C-%%%peptide%%% could %%%attenuate%%% PMN-induced %%%cardiac%%% dysfunction. We examined the effects of C-%%%peptide%%% in isolated ischemic (20 min) and reperfused (45 min) rat hearts perfused with PMNs. C-%%%peptide%%% (70 nmol/kg iv) given 4 or 24 h before I/R significantly improved coronary flow ($P < 0.05$), left ventricular developed pressure (LVDP) ($P < 0.01$), and the maximal rate of development of LVDP (+dP/dtmax) compared with I/R hearts obtained from rats given 0.9% NaCl ($P < 0.01$). NG-nitro-L-arginine methyl ester (L-NAME) (50 mumol/l) blocked these cardioprotective effects. In addition, C-%%%peptide%%% significantly reduced %%%cardiac%%% PMN infiltration from 183 +- 24 PMNs/mm2 in untreated hearts to 44 +- 10 and 58 +- 25 PMNs/mm2 in hearts from 4- and 24-h C-%%%peptide%%%-treated rats, respectively. Rat PMN adherence to rat superior mesenteric artery exposed to 2 U/ml thrombin was significantly reduced in rats given C-%%%peptide%%% compared with rats given 0.9% NaCl ($P < 0.001$). Moreover, C-%%%peptide%%% enhanced basal NO release from rat aortic segments. These results provide evidence that C-%%%peptide%%% can significantly %%%attenuate%%% PMN-induced %%%cardiac%%% contractile dysfunction in the isolated perfused rat heart subjected to I/R at least in part via enhanced NO release.

14867510 BIOSIS NO.: 199900127170
Acute anti-ischemic effects of perindoprilat in men with coronary artery disease and their relation with left ventricular function
AUTHOR: Bartels G Louis; Van Den Heuvel Ad F M (Reprint); Van Veldhuisen Dirk J; Van Der Ent Martin; Remme Willem J
AUTHOR ADDRESS: Dep. Cardiol./Thoraxcent., Univ. Hosp. Groningen, Hanzeplein 1, P.O. Box 30.001, 9700 RB Groningen, Netherlands** Netherlands
JOURNAL: American Journal of Cardiology 83 (3): p332-336 Feb. 1, 1999 1999
MEDIUM: print
ISSN: 0002-9149
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Long-term angiotensin-converting enzyme (ACE) inhibition may %%%reduce%%% ischemic events in patients with coronary artery disease, but whether it protects against acute %%%ischemia%%% or the effects of preexisting left ventricular (LV) dysfunction on potential anti-ischemic properties is unknown. We performed a double-blind trial in 25 patients with exercise-induced %%%ischemia%%%. The effects of perindoprilat on pacing-induced myocardial %%%ischemia%%% were examined. Fourteen patients received perindoprilot and 11 patients received placebo. Based on LV

function, 2 subgroups were formed in the perindoprilat group: 7 patients with LV dysfunction (LV ejection fraction <0.40), and 7 patients with normal LV function. After receiving the study medication, the pacing test was repeated. During the first pacing test both groups developed %%%ischemia%%%. After perindoprilat administration, the increase in systemic vascular resistance and LV end-diastolic pressure were significantly blunted (p <0.05). Further, the %%%ischemia%%%-induced increase in arterial and %%%cardiac%%% uptake of norepinephrine was inhibited by perindoprilat, and the increase in atrial natriuretic %%%peptide%%% was less pronounced; also, ST-segment depression was reduced by 32% compared with placebo (all p <0.05). In the group with LV dysfunction, perindoprilat reduced LV end-diastolic pressure significantly by 67% and myocardial lactate production was prevented, but this did not happen in the group with normal LV function. in addition, the increase in arterial norepinephrine was reduced by 74% and 33%, respectively (p <0.05). These results indicate that perindoprilat reduced acute, pacing-induced %%%ischemia%%% in normotensive patients. In patients with (asymptomatic) LV dysfunction these effects were more pronounced than in patients with normal LV function.

14234891 BIOSIS NO.: 199800029138
Right coronary artery stenosis is associated with impaired %%%cardiac%%% endocrine function during exercise
AUTHOR: Davidson N C; Pringle S D; Pringle T H; McNeill G P; Struthers A D (Reprint)
AUTHOR ADDRESS: Dep. Clin. Pharmacol., Ninewells Hosp. Med. Sch., Dundee DD1 9SY, UK**UK
JOURNAL: European Heart Journal 18 (11): p1749-1754 Nov., 1997 1997
MEDIUM: print
ISSN: 0195-668X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Aims: Resting plasma levels of atrial natriuretic %%%peptide%%% and B-type natriuretic %%%peptide%%% rise with left ventricular dysfunction, but little is known about effects of %%%cardiac%%% ischaemia on atrial natriuretic %%%peptide%%% and B-type natriuretic %%%peptide%%% levels during exercise. We investigated exercise levels of atrial natriuretic %%%peptide%%% and B-type natriuretic %%%peptide%%% in patients with suspected angina to determine whether these measurements could improve non-invasive assessment of coronary disease severity. Methods and results: One hundred patients performed an exercise test (Bruce protocol) within 2 weeks of coronary angiography. Plasma levels of atrial natriuretic %%%peptide%%% and B-type natriuretic %%%peptide%%% were measured at rest and at peak exercise. Multivariate regression analysis was used to assess effects of age, sex, coronary anatomy, exercise time and ventricular function on atrial natriuretic %%%peptide%%% and B-type natriuretic %%%peptide%%% levels. Increasing age and female sex were significantly associated with higher resting atrial natriuretic %%%peptide%%% levels; age alone was associated with higher exercise atrial natriuretic %%%peptide%%% levels. As expected, left

ventricular end-diastolic pressure and disease of left anterior descending and circumflex coronary arteries were associated with increased resting B-type natriuretic %%%peptide%%% levels. However, the usual rise in B-type natriuretic %%%peptide%%% levels during exercise was independently reduced by disease of the right coronary artery. Conclusion: This paradoxical effect of right coronary artery disease limits the value of natriuretic %%%peptide%%% measurements as predictors of coronary disease severity. Impaired release of B-type natriuretic %%%peptide%%% may %%%reduce%%% exercise tolerance in patients with right coronary artery disease.

3/7/18
DIALOG(R)File 5:Biosis Previews(R)

14100446 BIOSIS NO.: 199799734506
Unmet therapeutic needs in the management of acute %%%ischemia%%%
AUTHOR: White Harvey D
AUTHOR ADDRESS: Cardiol. Dep., Green Lane Hosp., Private Bag 92 189, Auckland 1030, New Zealand**New Zealand
JOURNAL: American Journal of Cardiology 80 (4A): p2B-10B 1997 1997
ISSN: 0002-9149
DOCUMENT TYPE: Article; Literature Review
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Unstable angina and myocardial infarction (MI) continue to present a major challenge in clinical management. These acute ischemic coronary syndromes (AICS) are a spectrum of clinical presentations of the same pathophysiologic mechanism: thrombus formation superimposed on atherosclerotic plaque disruption or erosion. Current approaches to the management of AICS, which include both intervenfional and pharmacologic therapy, have been introduced to clinical practice during the past 20 years, and most of them have demonstrated efficacy in clinical studies. A common inadequacy of current therapies, however, is the lack of significant inhibition of platelet aggregation-the crucial event in the formation of coronary thrombi and the pathogenesis of AICS. The final common pathway to platelet aggregation is the activation of the platelet glycoprotein (GP) IIb-IIIa receptor, which allows the cross-linking of adjacent platelets by the adhesive plasma proteins fibrinogen and von Willebrand's factor. The emergence of the GP IIb-IIIa receptor as a potential treatment target has led to the development of several inhibitors of its function. The inhibitors most advanced in clinical development are the chimeric monoclonal antibody abciximab (ReoPro) and the cyclic %%%peptide%%% eptifibatide (INTEGRIUN). In phase III clinical trials, both abciximab and eptifibatide have been shown to %%%reduce%%% the incidence of %%%cardiac%%% events in patients at risk for abrupt vessel closure after coronary angioplasty. Inhibition of the GP IIb-IIIa receptor is the most promising novel approach to the treatment of unstable angina and MI, and it may soon be an indispensable component of the management of patients with AICS.

3/7/19
DIALOG(R)File 5:Biosis Previews(R)

13185579 BIOSIS NO.: 199698653412
The contribution of neutrophils to reperfusion arrhythmias and a possible role for antiadhesive pharmacological substances
AUTHOR: Dhein S (Reprint); Schott M; Gottwald E; Mueller A; Klaus W
AUTHOR ADDRESS: Inst. Pharmakol., Univ. Cologne, Gleueler Strasse 24, D-50931 Cologne, Germany**Germany
JOURNAL: Cardiovascular Research 30 (6): p881-888 1995 1995
ISSN: 0008-6363
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Objectives: It is known that neutrophilic leukocytes contribute to cellular damage in the course of %%%cardiac%%% %%%ischemia%%% /reperfusion. A role in arrhythmogenesis, although controversial, has been ascribed in some studies to the leukocytes, but investigations evaluating possible beneficial effects of inhibitors of neutrophil adhesion or transmigration are still missing. Methods: Isolated spontaneously beating rabbit hearts, perfused with saline solution at constant pressure according to the Langendorff technique, were treated with 15 min infusion of autologous neutrophils. 10 min after the start of this infusion the hearts were submitted to coronary occlusion (LAD) for 30 min followed by 30 min reperfusion. Four experimental groups were investigated: (1) saline-perfused control hearts, (2) leukocyte-perfused hearts, (3) leukocyte-perfused hearts treated with RGDS %%%peptide%%%, (4) leukocyte-perfused hearts treated with chondroitin sulfate C. In all experiments epicardial potential mapping was carried out (256 unipolar leads). At the end of each experiment the hearts were prepared for histology and after staining leukocyte accumulation in the ischemic zone, in the border zone and in the non-ischemic area was evaluated. Results: In leukocyte-perfused hearts submitted to %%%ischemia%%%/reperfusion we found a somewhat enhanced arrhythmogenesis, enhanced ST-segment deviation, and a 2-3-fold increase in leukocyte accumulation in the ischemic and border zone as compared to the non-ischemic tissue as well as increased dispersion of epicardial potential duration especially during reperfusion. These changes and the leukocyte accumulation could be suppressed by treatment with RGDS and to a somewhat lesser extent with chondroitin sulfate C. In addition, arrhythmogenesis could be reduced but not completely suppressed by that treatment. Conclusions: From these results we conclude that: (a) leukocytes exert an aggravating effect in arrhythmogenesis during %%%ischemia%%%/reperfusion, (b) the arrhythmogenic substrate for this effect may consist of an enhanced dispersion of potential duration and (c) that inhibition of leukocyte accumulation can at least partially %%%reduce%%% arrhythmogenesis and may be of therapeutic interest as an additional treatment.

3/7/20
DIALOG(R)File 5:Biosis Previews(R)

13160884 BIOSIS NO.: 199698628717
Substrate metabolism, hormone interaction, and angiotensin-converting enzyme inhibitors in left ventricular hypertrophy
AUTHOR: Zhu Yi-Chun; Zhu Yi-Zhun; Spitznagel Heidi; Gohlke Peter; Unger Thomas (Reprint)

AUTHOR ADDRESS: Dep. Pharmacology, Christian Albrechts Univ. Kiel, Hospitalstr. 4, 24105 Kiel, Germany**Germany
JOURNAL: Diabetes 45 (SUPPL. 1): pS59-S65 1996 1996
ISSN: 0012-1797
DOCUMENT TYPE: Article; Literature Review
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Left ventricular hypertrophy is considered to be an independent risk factor giving rise to %%%ischemia%%%, arrhythmias, and left ventricular dysfunction. Slow movement of intracellular calcium contributes to the impaired contraction and relaxation function of hypertrophied myocardium. Myofibril content may also be shifted to fetal-type isoforms with decreased contraction and relaxation properties in left ventricular hypertrophy. Myocyte hypertrophy and interstitial fibrosis are regulated independently by mechanical and neurohumoral mechanisms. In severely hypertrophied myocardium, capillary density is reduced, the diffusion distance for oxygen, nutrients, and metabolites is increased, and the ratio of energy-production sites to energy-consumption sites is decreased. The metabolic state of severely hypertrophied myocardium is anaerobic, as indicated by the shift of lactate dehydrogenase marker enzymes. Therefore, the hypertrophied myocardium is more vulnerable to ischemic events. As a compensatory response to severe %%%cardiac%%% hypertrophy and congestive heart failure, the ADP/ATP carrier is activated and atrial natriuretic %%%peptide%%% is released to increase high-energy phosphate production and %%%reduce%%% %%%cardiac%%% energy consumption by vasodilation and sodium and fluid elimination. However, in severely hypertrophied and failing myocardium, vasoconstrictor and sodium- and fluid-retaining factors, such as the renin-angiotensin system, aldosterone, and sympathetic nerve activity, play an overwhelming role. Angiotensin-converting enzyme inhibitors (ACEIs) are able to prevent %%%cardiac%%% hypertrophy and improve %%%cardiac%%% function and metabolism. Under experimental conditions, these beneficial effects can be ascribed mainly to bradykinin potentiation, although a contribution of the ACEI-induced angiotensin II reduction cannot be excluded.
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PLEASE ENTER A COMMAND OR BE LOGGED OFF IN 5 MINUTES

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4/7/1
DIALOG(R)File 5:Biosis Previews(R)

09790101 BIOSIS NO.: 198988105216
ISOLATION AND SEQUENCE DETERMINATION OF RAT %%%CARDIAC%%% NATRIURETIC %%%PEPTIDE%%%
AUTHOR: KAMBAYASHI Y (Reprint); NAKAO K; ITOH H; HOSODA K; SAITO Y; YAMADA T; MUKOYAMA M; ARAI H; SHIRAKAMI G; ET AL
AUTHOR ADDRESS: SECOND DIV, DEP MED KYOTO UNIV SCH MED, KYOTO 606, JAPAN** JAPAN
JOURNAL: Biochemical and Biophysical Research Communications 163 (1): p 233-240 1989
ISSN: 0006-291X
DOCUMENT TYPE: Article

RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: We have isolated a %%%cardiac%%% natriuretic %%%peptide%%% of 5K %%%daltons%%% from the rat atrium and determined its amino acid sequence. The 5K %%%cardiac%%% natriuretic %%%peptide%%% was elucidated to be a 45-amino acid peptide with the sequence of S-Q-D-S-A-F-R-I-Q-E-R-L-R-N-S-K-M-A-H-S-S-S-C-F-G-Q-K-I-D-R-I-G-A-V-S-R-L-G-C-D-G-L-R-L-F by sequencing the native peptide and its lysyl endopeptidase digests. The sequence of this peptide was identical to the amino acid sequence [51-95] of the rat brain natriuretic peptide (BNP) precursor deduced from the cDNA sequence. The 5K %%%cardiac%%% natriuretic %%%peptide%%%, or BNP[51-95], was identified as the major storage and secretory form derived from the BNP precursor in the rat heart.

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DIALOG(R)File 5:Biosis Previews(R)

08243664 BIOSIS NO.: 198682090051
%%%ISCHEMIA%%% OF THE DOG HEART INDUCES THE APPEARANCE OF A %%%CARDIAC%%% MESSENGER RNA CODING FOR A PROTEIN WITH MIGRATION CHARACTERISTICS SIMILAR TO HEAT-SHOCK STRESS PROTEIN 71
AUTHOR: DILLMANN W H (Reprint); MEHTA H B; BARRIEUX A; GUTH B D; NEELEY W E ; ROSS J JR
AUTHOR ADDRESS: DEP MED, UCSD MED CENT, 225 DICKINSON ST, SAN DIEGO, CA 92103, USA**USA
JOURNAL: Circulation Research 59 (1): p110-114 1986
ISSN: 0009-7330
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Recent evidence indicates that different forms of stress, including hypoxia, can induce specific proteins called heat-shock or stress proteins in various types of mammalian cells. These studies examined whether myocardial %%%ischemia%%% can result in increased levels of proteins with molecular weight and isoelectric point characteristics similar to those described for heat-shock or stress proteins. The left anterior descending coronary artery of the dog heart was completely occluded; normal and ischemic myocardial samples were obtained 6 hours after occlusion; and total %%%cardiac%%% proteins and RNA were prepared. Ribonucleic acid was translated in vitro in a modified rabbit reticulocyte lysate system, and [35S]-methionine-labelled translational products as well as unlabelled %%%cardiac%%% proteins were separated by two-dimensional gel electrophoresis. Total proteins were visualized by silver staining and in vitro translation products quantified by flurometry. A translatable mRNA coding for a 71,000 %%%dalton%%% %%%peptide%%% with an isoelectric point of 5.8 was markedly increased in the ischemic myocardium after 6 hours of %%%ischemia%%%. A protein with similar migration characteristics was detected in ischemic myocardium but not in normal myocardium. These results indicate that an mRNA coding for a translational product with similar migration characteristics of

heat-shock protein 71 is induced by %%%ischemia%%% in the dog heart.
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Set	Items	Description
S1	0	MYOPEPTIDIN
S2	396	(CARDIO OR CARDIAC) AND PEPTIDE AND (ISCHEMIA)
S3	20	S2 AND (REDUCE OR ATTENUATE OR ALLEVIATE)
S4	1	((CARDIO OR CARDIAC)(3W) (PEPTIDE OR POLYPEPTIDE)) AND DALTONS
S5	7598	((CARDIO OR CARDIAC) AND PEPTIDE)
S6	27	S5 AND DALTON?
S7	1	S6 AND ISCHEMIA

? t s6/7/1-27

6/7/1
DIALOG(R)File 5:Biosis Previews(R)

12869538 BIOSIS NO.: 199598337371
Primary structure and properties of helothermine, a %%%peptide%%% toxin that blocks ryanodine receptors
AUTHOR: Morrissette Jeffery; Kratezschmar Joern; Haendler Bernard; El-Hayek Roque; Mochca-Morales Javier; Martin Brian M; Patel Jitandrakumar R; Moss Richard L; Schleuning Wolf-Dieter; Coronado Roberto (Reprint); Possani Lourival D
AUTHOR ADDRESS: Dep. Physiol., Univ. Wisconsin Sch. Med., 1300 University Ave., Madison, WI 53705, USA**USA
JOURNAL: Biophysical Journal 68 (6): p2280-2288 1995 1995
ISSN: 0006-3495
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Helothermine, a protein from the venom of the Mexican beaded lizard (Heloderma horridum horridum), was found to inhibit (3H)ryanodine binding to %%%cardiac%%% and skeletal sarcoplasmic reticulum, to block %%%cardiac%%% and skeletal ryanodine receptor channels incorporated into planar bilayers, and to block Ca-2+-induced Ca-2+ release triggered by photolysis of nitr-5 in saponin-permeabilized trabeculae from rat ventricle. Cloning of the helothermine cDNA revealed that the protein is composed of 223 amino acids with a molecular mass of 25,376 %%%daltons%%% , and apparently is stabilized by eight disulfide bridges. The %%%peptide%%% sequence showed significant homology with a family of cysteine-rich secretory proteins found in the male genital tract and in salivary glands. The interaction of helothermine and ryanodine receptors should serve to define functional domains within the channel structure involved in the control of Ca-2+ release from sarcoplasmic reticulum.

6/7/2
DIALOG(R)File 5:Biosis Previews(R)

10875588 BIOSIS NO.: 199192121359
AGE-RELATED ALTERATIONS IN ADENYLYL CYCLASE SYSTEM OF RAT HEARTS
AUTHOR: URASAWA K (Reprint); MURAKAMI T; YASUDA H
AUTHOR ADDRESS: DEP PHARMACOL, M-0636, UNIV CALIF SAN DIEGO, LA JOLLA,

CALIF 92093, USA**USA
JOURNAL: Japanese Circulation Journal 55 (7): p676-684 1991
ISSN: 0047-1828
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: %%%Cardiac%%% membranes from 26-, 52- and 104-week-old Wistar rats were used to investigate the age-related alterations in the .beta.-adrenergic receptor-adenylyl cyclase system. The densities and affinities of .beta.-adrenoceptors did not change with aging. There were no significant changes in the total amount of stimulatory G-protein (Gs), and in Gs activity measured in a reconstitution assay using human platelet membranes. The major isoform of Gs.alpha., however, changed from a 45,000 to 52,000 %%%dalton%%% %%%peptide%%% with aging. The total amount of pertussis toxin substrates (Gi2 and Go) decreased significantly with aging. This finding was supported by the fact that pertussis toxin-induced potentiation of adenylyl cyclase activity was markedly reduced in the aged group. The activity of catalytic protein assessed by forskolin-stimulated adenylyl cyclase activity was decreased at 104 weeks. On the other hand, GTP analogue-stimulated adenylyl cyclase activity was significantly potentiated in the same group. These results suggest that the decreased sensitivity to catecholamines observed in aged hearts is mainly due to a dysfunction of catalytic protein, and that decreased Gi activity partially compensates for this catalytic dysfunction.

6/7/3
DIALOG(R)File 5:Biosis Previews(R)

10178768 BIOSIS NO.: 199089096659
CARDIOTROPIC ACTIVITY OF %%%PEPTIDE%%% PREPARATIONS OBTAINED FROM THE TISSUES OF HIBERNATING LONG-TERM SIBERIAN SUSLIKS
AUTHOR: SUKHOVA G S (Reprint); LEVASHOVA V G; KRAMAROVA L I; SVIRYAEV V I; ZIGANSHIN R KH; KOLAEVA S G; MIKHALEVA I I; POVZUN A A
AUTHOR ADDRESS: MV LOMONOSOV MOSC STATE UNIV, MOSCOW, USSR**USSR
JOURNAL: Doklady Akademii Nauk SSSR 307 (6): p1512-1514 1989
ISSN: 0002-3264
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: RUSSIAN

ABSTRACT: The possibility was studied of the direct effect of the %%%peptide%%% fractions of the tissue extracts of hibernating animals on the mechanical activity of the heart, as well as on the bioelectrical activity of its various compartments. Data were presented on the effect of the total %%%peptide%%% fractions with the molecular weight of 1000-10000 %%%dalton%%%. The peptides were obtained from the brain and small intestine of hibernating Citellus undulatus. Experiments were carried out in isolated hearts of the frogs Rana temporaria. A correlation was described between the amplitude and frequency of %%%cardiac%%% contractions and %%%peptide%%% fraction concentration. The %%%peptide%%% fractions inhibited the frequency and intensity of %%%cardiac%%% contractions. The registration of bioelectrical activity showed that the fractions affected the myocardial and pacemaker

structures of the heart.

6/7/4
DIALOG(R)File 5:Biosis Previews(R)

09790101 BIOSIS NO.: 198988105216
ISOLATION AND SEQUENCE DETERMINATION OF RAT %%%CARDIAC%%% NATRIURETIC %%%PEPTIDE%%%
AUTHOR: KAMBAYASHI Y (Reprint); NAKAO K; ITOH H; HOSODA K; SAITO Y; YAMADA T; MUKOYAMA M; ARAI H; SHIRAKAMI G; ET AL
AUTHOR ADDRESS: SECOND DIV, DEP MED KYOTO UNIV SCH MED, KYOTO 606, JAPAN** JAPAN
JOURNAL: Biochemical and Biophysical Research Communications 163 (1): p 233-240 1989
ISSN: 0006-291X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: We have isolated a %%%cardiac%%% natriuretic %%%peptide%%% of 5K %%%daltons%%% from the rat atrium and determined its amino acid sequence. The 5K %%%cardiac%%% natriuretic %%%peptide%%% was elucidated to be a 45-amino acid %%%peptide%%% with the sequence of S-Q-D-S-A-F-R-I-Q-E-R-L-R-N-S-K-M-A-H-S-S-S-C-F-G-Q-K-I-D-R-I-G-A-V-S-R-L-G-C-D-G-L-R-L-F by sequencing the native %%%peptide%%% and its lysyl endopeptidase digests. The sequence of this %%%peptide%%% was identical to the amino acid sequence [51-95] of the rat brain natriuretic %%%peptide%%% (BNP) precursor deduced from the cDNA sequence. The 5K %%%cardiac%%% natriuretic %%%peptide%%%, or BNP[51-95], was identified as the major storage and secretory form derived from the BNP precursor in the rat heart.

6/7/5
DIALOG(R)File 5:Biosis Previews(R)

09601752 BIOSIS NO.: 198987049643
DIHYDROPYRIDINE AND PHENYLALKYLAMINE RECEPTORS ASSOCIATED WITH %%%CARDIAC%%% AND SKELETAL MUSCLE CALCIUM CHANNELS ARE STRUCTURALLY DIFFERENT
AUTHOR: CHANG F C (Reprint); HOSEY M M
AUTHOR ADDRESS: DEP BIOLOGICAL CHEM STRUCTURE, UNIV HEALTH SCI/CHICAGO MED SCH, 3333 GREEN BAY ROAD, NORTH CHICAGO, ILL 60064, USA**USA
JOURNAL: Journal of Biological Chemistry 263 (35): p18929-18937 1988
ISSN: 0021-9258
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: We have purified putative L-type Ca2+ channels from chick heart by virtue of their associated high affinity receptors for the Ca2+ channel effectors, dihydropyridines (DHPs), and phenylalkylamines (PAAs). A %%%peptide%%% of 185,000-190,000 %%%daltons%%% was found to comigrate with the peak of DHP binding activity during purification through two

successive cycles of lectin affinity chromatography and sucrose density gradient centrifugation. A previously described %%%peptide%%% of 140,000 %%%daltons%%%, whose Mr was increased to .apprx. 180,000 under nonreducing conditions, also copurified with the 185-kDa %%%peptide%%% and dihydropyridine binding activity. When %%%cardiac%%% membranes were photolabeled with either the dihydropyridine [3H]azidopine or the PAA [3H]azidopamil prior to purification, a single, specifically labeled component of 185,000-190,000 %%%daltons%%% was present in the purified fractions. The properties of this 185-kDa %%%cardiac%%% DHP/PAA receptor were compared to the smaller 165-kDa DHP/PAA receptor previously purified from skeletal muscle. Antibodies raised against the 165-kDa skeletal muscle DHP/PAA receptor reacted with both rabbit and chick skeletal muscle receptors, but only poorly recognized, if at all, the %%%cardiac%%% 185-190 kDa component. The 185-kDa %%%peptide%%% present in the purified fractions obtained from %%%cardiac%%% muscle did not undergo substantial phosphorylation by cAMP-dependent protein kinase, while the purified 165-kDa %%%peptide%%% from rabbit and chick skeletal muscle was a good substrate for this kinase. The results show that the DHP and PAA receptors in %%%cardiac%%% muscle are contained in a 185-190-kDa %%%peptide%%% that is significantly larger than, and structurally and immunologically different from, it skeletal muscle counterpart.

6/7/6
DIALOG(R)File 5:Biosis Previews(R)

09287552 BIOSIS NO.: 198886127473
THE PRESENCE OF BRAIN NATRIURETIC %%%PEPTIDE%%% OF 12000 %%%DALTONS%%% IN PORCINE HEART
AUTHOR: MINAMINO N (Reprint); ABURAYA M; UEDA S; KANGAWA K; MATSUO H
AUTHOR ADDRESS: DEP ANESTHESIOL, MIYAZAKI MED COLL, 5200 KIHARA, KIYOTAKE, MIYAZAKI 889-16, JAPAN**JAPAN
JOURNAL: Biochemical and Biophysical Research Communications 155 (2): p 740-746 1988
ISSN: 0006-291X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Brain natriuretic %%%peptide%%% (BNP) and its N-terminally six amino acid extended form (BNP-32) have been identified in porcine brain. These peptides exert diuretic-natriuretic and hypotensive effects, and have remarkably high sequence homology to atrial natriuretic %%%peptide%%% (ANP). We have set up a radioimmunoassay system specific to BNP and surveyed immunoreactive (ir-) BNP in peripheral tissue. In porcine %%%cardiac%%% atrium we found the higehst concentration of ir-BNP. By using gel filtration and reverse phase high performance liquid chromatogrphy, ir-BNP was characterized. Most of ir-BNP in the atrium was found to exist as a high molecular weight form of 12,000 %%%daltons%%%, less than 15% of the total ir-BNP exist as low molecular weight forms such as BNP and BNP-32. These results suggest that BNP functions as a circulating hormone in addition to the neuropeptide function in brain.

6/7/7
DIALOG(R)File 5:Biosis Previews(R)

08594156 BIOSIS NO.: 198783073047
PURIFICATION AND CHARACTERIZATION OF THE DIHYDROPYRIDINE-SENSITIVE VOLTAGE-DEPENDENT CALCIUM CHANNEL FROM %%%CARDIAC%%% TISSUE
AUTHOR: COOPER C L (Reprint); VANDAELE S; BARHANIN J; FOSSET M; LAZDUNSKI M ; HOSEY M M
AUTHOR ADDRESS: DEPARTMENT OF BIOLOGICAL CHEMISTRY AND STRUCTURE, UNIVERSITY OF HEALTH SCIENCES/THE CHICAGO MEDICAL SCHOOL, NORTH CHICAGO, ILLINOIS 60064, USA**USA
JOURNAL: Journal of Biological Chemistry 262 (2): p509-512 1987
ISSN: 0021-9258
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The dihydropyridine-sensitive voltage-dependent Ca2+ channel from %%%cardiac%%% tissue was purified 900-fold using DEAE-Sephadex A-25, concanavalin A-Sepharose, and wheat germ agglutinin-Sepharose. The purified preparation was highly enriched in a %%%peptide%%% of 140,000 %%%daltons%%% when electrophoresed on sodium dodecyl sulfate gels in the presence of 2-mercaptoethanol, or 170,000 when electrophoresed in the presence of iodoacetamide. Polyclonal antibodies raised against the purified subunits of the rabbit skeletal muscle Ca2+ channel recognized the 170-kDa protein in preparations electrophoresed under nonreducing conditions, and the large %%%peptide%%% of 140 kDa and smaller peptides of 29-32 kDa in preparations analyzed under reducing conditions. Monoclonal antibodies, which were raised against the native Ca2+ channel from skeletal muscle, immunoprecipitated [3H]PN 200-110 binding activity from solubilized %%%cardiac%%% membranes and immunoprecipitated 125I-labeled peptides (from the purified %%%cardiac%%% Ca2+ channel preparation) which migrated as a single species of 170 kDa under nonreducing conditions, or as 140, 32, and 29 kDa under reducing conditions. The results show that the purified %%%cardiac%%% Ca2+ channel, like that previously purified from skeletal muscle, consists of a major component of 170 kDa which is comprised of a 140-kDa %%%peptide%%% linked by disulfide bonds to smaller peptides of 32-29 kDa. %%%Peptide%%% maps of the 140-kDa %%%peptide%%% purified from %%%cardiac%%% and skeletal muscle preparations were strikingly similar, suggesting a high degree of homology in their primary sequence.

6/7/8
DIALOG(R)File 5:Biosis Previews(R)

08566399 BIOSIS NO.: 198783045290
PHOTOAFFINITY LABELING OF A 33-35000 %%%DALTON%%% PROTEIN IN %%%CARDIAC%%% SKELETAL AND SMOOTH MUSCLE MEMBRANES USING A NEW IODINE-125-LABELED 1 4 DIHYDROPYRIDINE CALCIUM CHANNEL ANTAGONIST
AUTHOR: SARMIENTO J G (Reprint); EPSTEIN P M; ROWE W A; CHESTER D W; SMILOWITZ H; WEHINGER E; JANIS R A
AUTHOR ADDRESS: BRISTOL MYERS CO, PRDD, PO BOX 4755, SYRACUSE, NY 13221-4755, USA**USA
JOURNAL: Life Sciences 39 (25): p2401-2410 1986
ISSN: 0024-3205
DOCUMENT TYPE: Article

RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The binding sites for Ca2+ channel antagonists were probed using Bay P 8857 [2-iodoethyl isopropyl 1,4-dihydropyridine-2,6-dimethyl-4-(3-nitrophenyl)-pyridine-3,5-dicarboxy late] that has been radiolabelled with 125I. This drug was shown to bind with high affinity to %%%cardiac%%%, smooth, and skeletal muscle membranes, with a KD .simeq. 0.3 nM. A protein of molecular weight 33-35,000 %%%daltons%%% was specifically and irreversibly radiolabelled after irradiation of %%%cardiac%%%, skeletal and aortic smooth muscle membranes, incubated with the [125I]-Bay P 8857. The %%%peptide%%% labelled by 1,4-dihydropyridine binding therefore appears similar in size for %%%cardiac%%%, skeletal, and smooth muscle. This data suggests that of the three %%%peptide%%% subunits which reportedly comprise the skeletal and %%%cardiac%%% muscle 1,4-dihydropyridine receptor complex, the 33-35,000 %%%dalton%%% %%%peptide%%% contains the dihydropyridine binding site.

6/7/9
DIALOG(R)File 5:Biosis Previews(R)

08526190 BIOSIS NO.: 198783005081
MYOSIN ISOZYMES IN RABBIT AND HUMAN SMOOTH MUSCLES
AUTHOR: LEMA M J (Reprint); PAGANI E D; SHEMIN R; JULIAN F J
AUTHOR ADDRESS: DEP ANESTHESIA RES LAB, BRIGHAM AND WOMEN'S HOSP, 75 FRANCIS ST, BOSTON, MA 02115, USA**USA
JOURNAL: Circulation Research 59 (2): p115-123 1986
ISSN: 0009-7330
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Although multiple forms of myosin in %%%cardiac%%% and skeletal muscle have been identified, it has not been firmly established that myosin isozymes are present in adult smooth muscle. Myosin, extracted from human thoracic aorta and lower saphenous vein and rabbit aorta and uterus, was analyzed by pyrophosphate gel electrophoresis to determine if myosin isozymes are present in these tissues. In all smooth muscle tissues studied, two myosin isozymes were detected and labelled as smooth muscle 1 and smooth muscle 2, smooth muscle 2 being the faster migrating isozyme. Bovine cultured smooth muscle cells from the media of thoracic aorta also contained two forms of myosin. However, cultured fibroblasts contained only one form of myosin. Extracting myosin from either relaxed or contracting rabbit aortic smooth muscle did not influence the mobilities of smooth muscle 1 and smooth muscle 2 on pyrophosphate gels, suggesting that the degree of light chain phosphorylation did not significantly alter the electrophoresis mobility under our conditions. Smooth muscle 1 and smooth muscle 2 myosins each contain heavy chains (200,000 %%%daltons%%%) and light chains (20,000 and 17,000 %%%daltons%%%) in addition to filamin (235,000 %%%daltons%%%), which is closely associated with the native protein. Myosin %%%peptide%%% maps of rabbit aorta and uterus revealed areas of substantially different banding patterns between smooth muscle 1 and smooth muscle 2 from the same tissue. Similar %%%peptide%%% maps of smooth muscle 1 bands were produced

from the different tissues, but the smooth muscle 2 maps were dissimilar. Since the speed of shortening of striated muscle appears to be influenced by the myosin isozyme patterns, the possibility exists that the contractile properties of various smooth muscle may also be influenced by the relative amounts of myosin isozymes present.

6/7/10
DIALOG(R)File 5:Biosis Previews(R)

08243664 BIOSIS NO.: 198682090051
ISCHEMIA OF THE DOG HEART INDUCES THE APPEARANCE OF A %%%CARDIAC%%% MESSENGER RNA CODING FOR A PROTEIN WITH MIGRATION CHARACTERISTICS SIMILAR TO HEAT-SHOCK STRESS PROTEIN 71
AUTHOR: DILLMANN W H (Reprint); MEHTA H B; BARRIEUX A; GUTH B D; NEELEY W E ; ROSS J JR
AUTHOR ADDRESS: DEP MED, UCSD MED CENT, 225 DICKINSON ST, SAN DIEGO, CA 92103, USA**USA
JOURNAL: Circulation Research 59 (1): p110-114 1986
ISSN: 0009-7330
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Recent evidence indicates that different forms of stress, including hypoxia, can induce specific proteins called heat-shock or stress proteins in various types of mammalian cells. These studies examined whether myocardial ischemia can result in increased levels of proteins with molecular weight and isoelectric point characteristics similar to those described for heat-shock or stress proteins. The left anterior descending coronary artery of the dog heart was completely occluded; normal and ischemic myocardial samples were obtained 6 hours after occlusion; and total %%%cardiac%%% proteins and RNA were prepared. Ribonucleic acid was translated in vitro in a modified rabbit reticulocyte lysate system, and [35S]-methionine-labelled translational products as well as unlabelled %%%cardiac%%% proteins were separated by two-dimensional gel electrophoresis. Total proteins were visualized by silver staining and in vitro translation products quantified by flurometry. A translatable mRNA coding for a 71,000 %%%dalton%%% %%%peptide%%% with an isoelectric point of 5.8 was markedly increased in the ischemic myocardium after 6 hours of ischemia. A protein with similar migration characteristics was detected in ischemic myocardium but not in normal myocardium. These results indicate that an mRNA coding for a translational product with similar migration characteristics of heat-shock protein 71 is induced by ischemia in the dog heart.

6/7/11
DIALOG(R)File 5:Biosis Previews(R)

08145344 BIOSIS NO.: 198681109235
SUBUNIT STRUCTURE AND MULTIPLE PHOSPHORYLATION SITES OF PHOSPHOLAMBAN
AUTHOR: IMAGAWA T (Reprint); WATANABE T; NAKAMURA T
AUTHOR ADDRESS: DEP OF MOLECULAR PHYSIOL, NATL CARDIOVASCULAR CENT RES INST, SUITA, OSAKA 565, JAPAN**JAPAN

JOURNAL: Journal of Biochemistry (Tokyo) 99 (1): p41-54 1986
ISSN: 0021-924X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The phosphorylation-induced mobility shift of the high molecular weight form of phospholamban (24,500 %%%daltons%%%) in the %%%cardiac%%% sarcoplasmic reticulum produced on 3',5'-cyclic AMP (cAMP)-dependent phosphorylation with 5 mM ATP was resolved into five clear steps on sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE), and on Ca2+-calmodulin-dependent phosphorylation into ten steps. The mobility shift of the low molecular weight form of phospholamban (< 14,400 %%%daltons%%%) in these reactions occurred in one step and two steps, respectively. With the two protein kinase activities, the electrophoretic pattern of the mobility shifts of the high and low molecular weight forms of phospholamban was similar to that obtained with Ca2+-calmodulin-dependent protein kinase alone. The results of pulse-chase experiments involving the centrifuge column method suggested that the site(s) of phosphorylation by cAMP- and Ca2+-calmodulin-dependent protein kinase activities are on the same phospholamban molecule. Two-dimensional tryptic %%%peptide%%% maps of phosphorylated phospholamban indicated that cAMP-dependent protein kinase phosphorylates at a single site, A, and Ca2+-calmodulin-dependent protein kinase phosphorylates at sites C1 and C2 in the low moleuclar weight form, where A is different from C1 but may be the same as C2. The high moleuclar weight form of phospholamban is suggested to be a pentamer of identical monomers (low molecular weight form) having one phosphorylaton site for cAMP-dependent protein kinase and two for Ca2+-calmodulin-dependent protein kinase.

07747420 BIOSIS NO.: 198580056315
%%%CARDIAC%%% SUBSTANCES THAT INFLUENCE BLOOD PRESSURE 2. POTENT PRESSOR ACTIVITY IN RAT AND RABBIT ATRIAL MUSCLE
AUTHOR: NIEUWENHUIS J J (Reprint); THERON J J
AUTHOR ADDRESS: INST CELLULAR PHYSIOLOGY, DEP PHYSIOLOGY, UNIV PRETORIA, PRETORIA, S AFR**SOUTH AFRICA
JOURNAL: Biochemical and Biophysical Research Communications 129 (2): p 472-478 1985
ISSN: 0006-291X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: In addition to their natriuretic, diuretic and vasodilator activities, freshly prepared aqueous extracts of either rat or rabbit atrial myocardium were shown to elicit significant increases in the blood-pressure of anesthetized rats. Small aliquots (0.05 ml) i.v. administered cause a transient rise in mean arterial blood-pressure of up to 20%. Slow infusion of 0.4 ml right atrial extract (corresponding to .apprx. 1/2 of a rabbit right atrial lobe) during 90 s caused the expected natriuresis and diuresis, together with a sustained elevation in

arterial blood-pressure (.apprx. 25%) that returned to normal within 3 min. This potent pressure activity could not be detected in ventricular extracts. It was furthermore readily separable from the natriuretic peptides and catecholamines by ultrafiltration. The atrial pressor factor is a small proteolytically unstable molecule (300-1000 %%%dalton)%%%.

07355335 BIOSIS NO.: 198478090742
HIGH AFFINITY ANGIOTENSIN II RECEPTORS IN MYO CARDIAL SARCOLEMMAL MEMBRANES CHARACTERIZATION OF RECEPTORS AND COVALENT LINKAGE OF IODINE-125 LABELED ANGIOTENSIN II TO A MEMBRANE COMPONENT OF 116000 %%%DALTONS%%%
AUTHOR: ROGERS T B (Reprint)
AUTHOR ADDRESS: DEP BIOLOGICAL CHEMISTRY, UNIV MD, SCH MED, BALTIMORE, MD 21201, USA**USA
JOURNAL: Journal of Biological Chemistry 259 (13): p8106-8114 1984
ISSN: 0021-9258
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: High affinity receptors for angiotensin II have been identified on purified %%%cardiac%%% sarcolemmal membranes. Equilibrium binding studies were performed with 125I-labeled angiotensin II and purified sarcolemmal vesicles from calf ventricle. The curvilinear Scatchard plots were evaluated by nonlinear regression analysis using a 2-site model which identified a high affinity site Kd1 = 1.08 .+-. 0.3 nM and N1 = 52 .+-. 10 fmol/mg of protein and a low affinity site Kd2 = 52 .+-. 16 nM and N2 = 988 .+-. 170 fmol/mg of protein. Monovalent and divalent cations inhibited the binding of 125I-angiotensin II by 50%. The affinity of angiotensin II analogs for the receptor was determined using competitive binding assays; sarcosine1,leucine8-angiotensin II (Sar1,Leu8-angiotensin II), Kd = 0.53 nM; angiotensin II, Kd = 2.5 nM; des-aspartic acid1-angiotensin II, Kd = 4.81 nM; angiotensin I, Kd = 77.6 nM. There is a positive correlation between potency in inducing positive inotropic response in myocardial preparations reported by others and potency for the hormone receptor observed in the binding assays. Pseudo-Hill plots of the binding data showed that agonists display biphasic binding with Hill numbers around 0.65 while antagonists recognized a single class of high affinity receptors with Hill numbers close to unity. These data were confirmed using 125I-Sar1,Leu8-angiotensin II in equilibrium binding studies which showed that this antagonist bound to a single class of receptor sites; Kd = 0.42 .+-. 0.04 nM and N = 1050 .+-. 110 fmol/mg of protein. Competition-binding experiments with this 125I-%%%peptide%%% yielded monophasic curves with Hill numbers close to unity for both agonists and antagonists. Membrane-bound 125I-angiotensin II was covalently linked to its receptor by the use of bifunctional cross-linking reagents such as dithiobis(succinimidyl propionate) and bis[2-(succinimidooxycarbonyloxy)ethyl]sulfone. Analysis of the membranes showed the labeling of a component with an apparent MW = 116,000. The affinity labeled species showed characteristics expected of a functional component of the high affinity receptor. The affinity labeling of this membrane component was inhibited by nanomolar angiotensin II or Sar1,Leu8-angiotensin II. High affinity receptors exist for angiotensin

II that most likely mediate the posistive inotropic effects of this hormone on myocardial cells. A macromolecule of MW = 116,000 represents a component of the high affinity angiotensin II receptor on %%%cardiac%%% sarcolemmal membranes.

6/7/14
DIALOG(R)File 5:Biosis Previews(R)

07354281 BIOSIS NO.: 198478089688
SEQUENCE OF THE 20 KILODALTON HEAVY CHAIN %%%PEPTIDE%%% FROM THE CARBOXYL TERMINUS OF BOVINE %%%CARDIAC%%% MYOSIN SUBFRAGMENT 1
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JOURNAL: Journal of Clinical Investigation 74 (2): p639-646 1984
ISSN: 0021-9738
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: An almost complete amino acid sequence of the carboxyl-terminal 20-kD [%%%dalton%%%] tryptic heavy chain %%%peptide%%% from bovine %%%cardiac%%% myosin Subfragment-1 (S-1) was determined by automated sequential degradation of the undigested %%%peptide%%% and subframents derived by chemical and enzymatic digestion. The fragment contains 169 residues, including 2 reactive cysteinyl residues which are located 9 residues apart. At 6 positions in the sequence, 2 amino acid residues were present and 2 different versions of a chymotryptic %%%peptide%%% were isolated in .apprx. 53 and 24% yields, suggesting that there are 2 %%%cardiac%%% myosin .beta.-type heavy chains in this species. Analysis of the secondary structure of the 20-kD %%%peptide%%% predicts that there are 2 distinct regions within the fragment. The 1st region (residues 1-121) contains 12% .alpha.-helix, 25% .beta.-sheet, 40% .beta.-bends and 19% coil; the 2nd region (residues 122-169) may form an extended .alpha.-helix. Comparison of the bovine sequence with the deduced amino acid sequence of a recombinant plasmid containing DNA sequences coding for the .beta.-heavy chain of rabbit %%%cardiac%%% myosin (pMHC.beta.174) reveals .apprx. 86% homology.

6/7/15
DIALOG(R)File 5:Biosis Previews(R)

07265912 BIOSIS NO.: 198478001319
PHOSPHORYLATION OF PURIFIED BOVINE %%%CARDIAC%%% SARCOLEMMA AND POTASSIUM STIMULATED CALCIUM UPTAKE
AUTHOR: FLOCKERZI V (Reprint); MEWES R; RUTH P; HOFMANN F
AUTHOR ADDRESS: PHARMAKOL INST, RUPRECHT-KARL-UNIV HEIDELBERG, IM NEUENHEIMER FELD 366, D-6900 HEIDELBERG 1, FRG**WEST GERMANY
JOURNAL: European Journal of Biochemistry 135 (1): p131-142 1983
ISSN: 0014-2956
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Sarcolemmal vesicles were prepared from bovine %%%cardiac%%% muscle by differential and discontinuous sucrose density gradient centrifugation. Na+/K+-ATPase was purified 33-fold to a specific activity of 53 .+-. 0.5 (12) .mu.mol Pi .times. mg-1 .times. h-1, binding sites for strophanthin 20-fold to a density of 56.3 .+-. 5.3 (14) pmol/mg and that for the Ca antagonist nitrendipine 5.5-fold to a density of 0.72 .+-. 0.07 (6) pmol/mg. The specific activity of the Na+/Ca2+ exchanger was 61.1 .+-. 3.7 (6) nmol/mg. The vesicles had an intravesicular volume of 20 .+-. 4 (4) .mu.l/mg and 56.9 .+-. 6(4%) of the vesicles were right-side-out oriented. Several peptides of the purified membranes were phosphorylated in the presence of Mg .cntdot. ATP and EGTA [ethyleneglycol-bis(.beta.-aminoethyl ether)N,N,N,N-tetraacetic acid]. Most of the radioactive phosphate was incorporated into a %%%peptide%%% with an apparent molecular mass of 22 kDa [kilo %%%dalton%%%]. Denaturation of the membranes at 100.degree. C changed the mobility of this %%%peptide%%% to 15 kDa and 11 kDA. This %%%peptide%%% could not be distinguished from a sarcoplasmic reticulum %%%peptide%%% of similar molecular mass. The phosphorylation of the sarcolemmal %%%peptide%%% was stimulated by Ca2+/calmodulin, cAMP and the catalytic subunit of cAMP-dependent protein kinase. A comparison of the phosphorylation of sarcolemmal membranes with that of sarcoplasmic reticulum showed that Ca2+/calmodulin stimulated in each membrane, the phosphorylation of the 22-kDA %%%peptide%%% and a 44-Da %%%peptide%%%, and in the sarcoplasmic reticulum the phosphorylation of an additional %%%peptide%%% of 55-kDa. Ca2+/calmodulin-dependent phosphorylation of a 55-kDa %%%peptide%%% could not be demonstrated in sarcolemma, regardless if sarcolemmal membranes were incubated together with sarcoplasmic reticulum or if the phosphorylation was carried out in the presence of purified %%%cardiac%%% myosin light chain kinase or phosphorylase kinase. Depolarization induced Ca2+ uptake which was measured according to Bartschat, D.K., Cyr, D.L. and Lindenmayer, G.E. (1980) was 5 nmol/mg protein. This uptake was not enhanced after preincubation of the vesicles with Mg .cntdot. ATP or Mg .cntdot. ATP and cAMP-dependent protein kinase. The value of 5 nmol/mg protein is in agreement with the theoretical amount of Ca2+ channel blockers. Prolonged incubation of Mg .cntdot. ATP with sarcolemmal vesicles in the presence of various ATPase inhibitors led to the hydrolysis of ATP. The liberated phosphate precipitated with Ca2+ in the presence of LaCl3. These precipitates amounted to an apparent Ca2+ uptake ranging from 50 to over 1000 nmol/mg. Evidently, K-stimulated Ca2+ uptake of bovine %%%cardiac%%% sarcolemmal vesicles is not enhanced in the presence of ATP or by phosphorylation of a 22-kDa %%%peptide%%%.

07257582 BIOSIS NO.: 198477089493
PHOSPHORYLATION OF %%%CARDIAC%%% SARCOLEMMA PROTEINS BY THE CALCIUM ACTIVATED PHOSPHO LIPID DEPENDENT PROTEIN KINASE
AUTHOR: IWASA Y (Reprint); HOSEY M M
AUTHOR ADDRESS: DEP BIOCHEM, UNIV HEALTH SCI, CHICAGO MED SCH, NORTH CHICAGO, ILL 60064, USA**USA
JOURNAL: Journal of Biological Chemistry 259 (1): p534-540 1984
ISSN: 0021-9258
DOCUMENT TYPE: Article

RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: %%%Cardiac%%% sarcolemma proteins [from chicks] were phosphorylated by exogenous Ca2+-activated phospholipid-dependent protein kinase (protein kinase C). The phosphorylation reactions were absolutely dependent on the simultaneous presence of Ca2+ and phosphatidylserine. Phosphatidylethanolamine, phosphatidylcholine, phosphatidylinositol, sphingomyelin and phosphatidic acid were ineffective in supporting protein kinase C-catalyzed membrane phosphorylation. The reactions were not stimulated by diolein. In contrast, diolein inhibited phosphatidylserine-stimulated phosphorylation at all Ca concentrations tested. The major substrates for protein kinase C in %%%cardiac%%% membranes were peptides of 88,000, 51,000, 42,000 %%%daltons%%% and the %%%peptide%%% known as phospholamban (MW = 27,000 or 11,000 depending on sample preparation). Phosphorylation of phospholamban by protein kinase C was additive with that catalyzed by membrane-bound or exogenous cyclic AMP-dependent protein kinase and with Ca2+-calmodulin-dependent protein kinase. Protein kinase C might have a role in the regulation of %%%cardiac%%% membrane phosphorylation by .beta.-adrenergic and muscarinic cholinergic agonists.

6/7/17
DIALOG(R)File 5:Biosis Previews(R)

07221605 BIOSIS NO.: 198477053516
OLIGOMERIC STRUCTURE OF MUSCARINIC RECEPTORS IS SHOWN BY PHOTO AFFINITY LABELING SUBUNIT ASSEMBLY MAY EXPLAIN HIGH AFFINITY AND LOW AFFINITY AGONIST STATES
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AUTHOR ADDRESS: DEP OF BIOCHEMISTRY, GEORGE S WISE FAC OF LIFE SCI, TEL-AVIV UNIV, 69978 TEL-AVIV, ISRAEL**ISRAEL
JOURNAL: Proceedings of the National Academy of Sciences of the United States of America 80 (1): p156-159 1983
ISSN: 0027-8424
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The potent muscarinic photoaffinity reagent N-methyl-4-piperidyl p-azidobenzilate (azido-4NMPB) was used to covalently label specific muscarinic binding sites in various brain regions and in the heart. In the cortex and hippocampus, a single specifically labeled protein with an apparent MW of 86,000 %%%daltons%%% [d] was detected by gel electrophoresis. In the medulla pons, cerebellum and %%%cardiac%%% atria, there was a 160,000-d band in addition to the 86,000-d polypeptide. Under certain conditions, alkali or hyroxylamine treatment dissociated both macromolecules into a single 40,000-d polypeptide. Apparently, the muscarinic receptor exists in oligomeric forms and a dimer and tetramer of a basic 40,000-d %%%peptide%%% may exist as interconvertible species. A model is proposed to explain the biological architecture of the muscarinic receptors and a possible correlation between the azido-4NMPB-labeled polypeptide, and the 2 states of the receptor observed in agonist binding experiments is suggested.

6/7/18
DIALOG(R)File 5:Biosis Previews(R)

07220745 BIOSIS NO.: 198477052656
THE C PROTEINS OF RABBIT RED WHITE AND %%%CARDIAC%%% MUSCLES
AUTHOR: YAMAMOTO K (Reprint); MOOS C
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JOURNAL: Journal of Biological Chemistry 258 (13): p8395-8401 1983
ISSN: 0021-9258
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: C-proteins were isolated from rabbit red skeletal muscle (soleus and semitendinosus) and %%%cardiac%%% muscle and their structure and properties compared with those of white muscle C-protein. The MW of white, red and %%%cardiac%%% C-proteins are 135,000, 145,000 and 150,000, respectively, and their s20.w [sedimentation coefficient] values are 4.3, 3.8 and 4.8 S, indicating that red C-protein is more asymmetric than the other 2. They elute quite differently from hydroxylapatite columns. Two-dimensional CNBr %%%peptide%%% maps show extensive differences in primary structure, and anti-white C-protein does not precipitate red or %%%cardiac%%% C-protein. Despite these structural differences, all 3 C-proteins bind equally to white, red or %%%cardiac%%% myosin and to actin. All 3 have the same effects on actinomyosin ATPase in 50 mM KCl; they inhibit red and white skeletal actomyosins but slightly activate %%%cardiac%%% actomyosin. X-protein, a 140,000-%%%dalton%%% contaminant of white C-protein, was also investigated. It is very similar to red C-protein in elution from hydroxylapatite columns, s20.w, amino acid composition, and primary structure, but small differences in MW and %%%peptide%%% maps indicate that the 2 proteins are probably not identical.

6/7/19
DIALOG(R)File 5:Biosis Previews(R)

06635681 BIOSIS NO.: 198274052104
STRUCTURAL AND ENZYMATIC COMPARISON OF HUMAN %%%CARDIAC%%% MUSCLE MYOSINS ISOLATED FROM INFANTS ADULTS AND PATIENTS WITH HYPERTROPHIC %%%CARDIO%%% MYOPATHY
AUTHOR: SCHIER J J (Reprint); ADELSTEIN R S
AUTHOR ADDRESS: LAB MOL CARDIOL, NATL HEART LUNG BLOOD INST, BETHESDA, MD 20205, USA**USA
JOURNAL: Journal of Clinical Investigation 69 (4): p816-825 1982
ISSN: 0021-9738
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Human %%%cardiac%%% ventricular myosins were prepared from autopsy samples from 9 adults, 7 infants and from surgical specimens from 7 patients undergoing left ventricular septal myectomy for obstructive

hypertrophic cardiomyopathy. Infant myosin differed from adult myosin in 2 important characteristics: .apprx. 30% of the 27,000-%%%dalton%%% myosin light chain is replaced by a 28,000-%%%dalton%%% light chain, and the actin-activated myosin MgATPase activity of infant myosin is significantly lower than that of adult myosin (64 nmol phosphate released/mg myosin per min vs. 124 nmol/mg per min at 37.degree. C). The K+-EDTA ATPase activity of the myosin measured in 0.5 M KCl is also lower in infants (1210 nmol/mg per min vs. 620 nmol/mg per min at 37.degree. C), but the Ca2+-activated ATPase is not significantly different. There were no differences in enzymatic activity between the normal adult and cardiomyopathic myosins. A detailed study was performed to investigate possible variations in the structure of the myosin heavy chain in infant, adult and cardiomyopathic samples. There were no significant differences between infant and normal adult, or between normal adult and cardiomyopathic myosins seen in pyrophosphate polyacrylamide gel electrophoresis or %%%peptide%%% mapping using .alpha.-chymotrypsin, papain, or cyanogen bromide to generate peptides. These results suggest that isoenzymes of human ventricular myosin do not exist for the myosin heavy chain in the specimens examined from infants, adults and patients with obstructive hypertrophic cardiomyopathy. The decreased actin-activated MgATPase activity found for infant myosin appears to be due solely by a partial replacement of the 27,000-%%%dalton%%% light chain of myosin with a 28,000-%%%dalton%%% light chain.

06628711 BIOSIS NO.: 198274045134
POLY %%%PEPTIDE%%% AND PHOSPHO LIPID COMPOSITION OF THE MEMBRANE OF RAT LIVER PEROXISOMES COMPARISON WITH ENDOPLASMIC RETICULUM AND MITOCHONDRIAL MEMBRANES
AUTHOR: FUJIKI Y (Reprint); FOWLER S-A; SHIO H; HUBBARD A L; LAZAROW P B
AUTHOR ADDRESS: ROCKEFELLER UNIV, NEW YORK 10021, USA**USA
JOURNAL: Journal of Cell Biology 93 (1): p103-110 1982
ISSN: 0021-9525
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: Membranes were isolated from highly purified peroxisomes, mitochondria and rough and smooth microsomes of rat liver by the 1-step Na2CO3 procedure described previously. The polypeptide compositions of these membranes determined by sodium dodecyl sulfate polyacrylamide gel electrophoresis were greatly dissimilar. The peroxisomal membrane contains 12% of the peroxisomal protein and consists of 3 major polypeptides (21,700, 67,700 and 69,700 %%%daltons%%%) as well as some minor polypeptides. The major peroxisomal membrane proteins as well as most of the minor ones are absent from the endoplasmic reticulum (ER). Most ER proteins are absent from peroxisomes. By EM, purified peroxisomal membranes are .apprx. 6.8 nm thick and have a typical trilaminar appearance. The phospholipid/protein ratio of peroxisomal membranes is .apprx. 200 nmol/mg; the principal phospholipids are phosphatidyl choline and phosphatidyl ethanolamine, as in ER and mitochondrial membranes. In contrast to the mitochondria, peroxisomal membranes contain no cardiolipin. All the membranes investigated contain a polypeptide band

with a molecular mass of .apprx. 15,000 %%%daltons%%%. Whether this represents an exceptional common membrane protein or a coincidence is unknown. The implications of these results for the biogenesis of peroxisomes are discussed.

6/7/21
DIALOG(R)File 5:Biosis Previews(R)

06288420 BIOSIS NO.: 198172022371
LOCALIZATION AND ISOLATION OF THE PEPTIDES IN %%%CARDIAC%%% MYOSIN THAT CONTAIN THE LYSYL RESIDUES ACCESSIBLE TO LABELING WITH A FLUORESCENT REAGENT N METHYL-2-ANILINO-6 NAPHTHALENES SULFONYL CHLORIDE
AUTHOR: HIRATSUKA T (Reprint); UCHIDA K
AUTHOR ADDRESS: DEP CHEM, ASAHIKAWA MED COLL, ASAHIKAWA, HOKKAIDO 078-11** JAPAN
JOURNAL: Journal of Biochemistry (Tokyo) 89 (1): p111-124 1981
ISSN: 0021-924X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The location of the lysyl residues which were accessible to labeling with a fluorescent reagent, N-methyl-2-anilino-6-naphthalenesulfonyl chloride (Mns-Cl), in the presence or absence of divalent metal ions was characterized by following the fluorescent peptides released from the labeled pig myosin on chymotryptic digestion. The Mns groups were mainly (> 90%) incorporated into myosin heavy chains (HC), not into light chains (LC) (< 6%). The groups remained in chymotryptic heavy meromyosin (> 80%). When the labeled myosin molecule was cleaved into subfragment-1 (S-1) and myosin rod, most (> 86%) of the groups were found in the released peptides, Mns-P1 (6600 %%%daltons%%%) and a further degraded %%%peptide%%%, Mns-P2 (4400 %%%daltons%%%), but not in S-1 or the rod (< 9%). The fluorescent peptides corresponding to Mns-P1 and Mns-P2 were produced by chymotryptic digestion of HC fraction separated from the labeled myosin, but not by similar digestion of LC. The rate of production of these peptides from myosin was nearly equal to that of S-1-HC. The isolation of the peptides was achieved by gel filtration on Sepharose 6B in 6 M guanidine -HCl. There was no significant difference in results between myosins labeled in the presence and absence of divalent metal ions. The N-terminal end analysis of Mns-P1 by the 1-dimethylaminophthalene-5-sulfonyl (Dns) method yielded a single N-terminal amino acid, alanine. S-1-HC showed no .alpha.-N-Dns-amino acid, suggesting that the S-1 head retains its blocked N-terminal end even after the production of Mns-P1. The peptides containing the lysyl residues accessible to labeling by Mns-Cl apparently were released from the S-1/subfragment-2 link region of %%%cardiac%%% myosin HC.

6/7/22
DIALOG(R)File 5:Biosis Previews(R)

05948868 BIOSIS NO.: 198069062855
PHENYL GLYOXAL MODIFICATION OF %%%CARDIAC%%% MYOSIN S-1 EVIDENCE FOR

ESSENTIAL ARGININE RESIDUES AT THE ACTIVE SITE
AUTHOR: MORKIN E (Reprint); FLINK I L; BANERJEE S K
AUTHOR ADDRESS: DEP INTERN MED, UNIV ARIZ HEALTH SCI CENT, TUCSON, ARIZ 85724, USA**USA
JOURNAL: Journal of Biological Chemistry 254 (24): p12647-12652 1979
ISSN: 0021-9258
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The role of arginine residues in the catalytic activity of beef %%%cardiac%%% myosin subfragment-1 (S-1) was investigated by selective modification with phenylglyoxal. Incorporation of about 2.8 mol of phenylglyoxal/mol of S-1 decreased Ca2+-ATPase activity about 50%. Gelation of the protein occurred at about 70% inactivation; extrapolation to complete inactivation indicated that loss of activity correlated with modification of about 4 arginyls/mol. Partial inactivation of S-1 with phenylglyoxal decreased MgADP binding markedly. When S-1 was modified in the presence of 5 mM MgADP, only 2 arginyls/mol were blocked and there was almost complete protection against loss of Ca2+-ATPase activity and ability to bind MgADP. Similar protection against inactivation by phenylglyoxal was obtained with MgATP or sodium pyrophosphate, but not with MgAMP or magnesium adenosine. Apparently 2 arginyls/myosin head are important for enzymatic activity, possibly serving as attachment points between enzyme and substrate. These essential arginyls were localized to a 17,000 %%%dalton%%% cyanogen bromide %%%peptide%%% from the heavy chain fragment of S-1.

6/7/23
DIALOG(R)File 5:Biosis Previews(R)

05729274 BIOSIS NO.: 197968040773
RESOLUTION OF THE PHOSPHORYLATED AND DEPHOSPHORYLATED CYCLIC AMP BINDING PROTEINS OF BOVINE %%%CARDIAC%%% MUSCLE BY AFFINITY LABELING AND 2 DIMENSIONAL ELECTROPHORESIS
AUTHOR: RANGEL-ALDAO R (Reprint); KUPIEC J W; ROSEN O M
AUTHOR ADDRESS: DEP MOL PHARMACOL, ALBERT EINSTEIN COLL MED, BRONX, NY 10461, USA**USA
JOURNAL: Journal of Biological Chemistry 254 (7): p2499-2508 1979
ISSN: 0021-9258
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The photoaffinity label 8-azido-cyclic [32P]AMP was used to analyze both the c[cyclic]AMP-binding component of the purified cAMP-dependent protein kinase, and the cAMP-binding proteins present in crude tissue extracts of bovine %%%cardiac%%% muscle. 8-Azido-cyclic [32P]AMP reacted specifically and in stoichiometric amounts with the cAMP-binding proteins of bovine %%%cardiac%%% muscle. Upon phosphorylation, the purified cAMP-binding protein from bovine %%%cardiac%%% muscle changed its electrophoretic mobility on sodium dodecyl sulfate-polyacrylamide gels from an apparent MW of 54,000 to an apparent MW of 56,000. In tissue extracts of bovine %%%cardiac%%% muscle, most of the 8-azido-cyclic [32P]AMP was incorporated into a protein band

with an apparent MW of 56,000 which shifted to 54,000 upon treatment with a phosphoprotein phosphatase. A substantial amount of the cAMP-binding protein appeared to be in the phosphorylated form. Autoradiograms following sodium dodecyl sulfate-polyacrylamide gel electrophoresis of both the pure and impure cAMP-binding proteins labeled with 8-azido-cyclic [32P]AMP revealed another binding component with a MW of 52,000 which incorporated 32P from [.gamma.-32P]ATP without changing its electrophoretic mobility. Limited proteolysis of the 56,000 and 52,000 %%%dalton%%% proteins labeled with 32P from either [.gamma.-32P]ATP .cntdot. Mg2+ or 8-azido-cyclic [32P]AP showed patterns indicating homology. %%%Peptide%%% maps of the major 8-azido-cyclic [32P]AMP-labeled proteins from tissue extracts of bovine %%%cardiac%%% muscle (MW = 56,000) and rabbit skeletal muscle (MW = 48,000) displayed completely different patterns as expected for the cAMP-binding components of types II and I protein kinases. Both phospho- and dephospho-cAMP-binding components from the purified bovine %%%cardiac%%% muscle protein kinase were also resolved by isoelectric focusing on polyacrylamide slab gels containing 8 M urea. The phosphorylated forms labeled with 32P from either [.gamma.-32P]ATP or 8-azido-cyclic [32P]AMP migrated as a doublet with a pI [isoelectric point] of 5.35. The 8-azido-cyclic [32P]AMP-labeled dephosphorylated form also migrated as a doublet with a pI of 5.40. The phosphorylated and dephosphorylated cAMP-binding proteins migrated with MW of 56,000 and 54,000, respectively, following a 2nd dimension electrophoresis in sodium dodecyl sulfate. The lower MW cAMP-binding component (MW = 52,000) was also apparent in these gels. Similar experiments with the cAMP-binding proteins present in tissue extracts of bovine %%%cardiac%%% muscle indicate that they are predominantly in the phosphorylated form.

05721777 BIOSIS NO.: 197968033276
BIOCHEMICAL AND IMMUNOLOGICAL HETEROGENEITY OF 100 ANGSTROM FILAMENT SUBUNITS FROM DIFFERENT CHICK CELL TYPES
AUTHOR: FELLINI S A (Reprint); BENNETT G S; TOYAMA Y; HOLTZER H
AUTHOR ADDRESS: DEP ANAT, SCH MED, UNIV PA, PHILADELPHIA, PA 19104, USA** USA
JOURNAL: Differentiation 12 (2): p59-70 1978
ISSN: 0301-4681
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The 100 .ANG. filament subunit proteins of chick fibroblasts and gizzard smooth muscle were compared. These proteins are major cellular components in these cell types, constituting up to 8% of the cell's total protein. Co-electrophoresis of cytoskeletal fractions of fibroblasts and smooth muscle revealed that the subunit proteins differed in their MW: 58,000 %%%daltons%%% in fibroblasts and 55,000 %%%daltons%%% in smooth muscle. Cytoskeletal fractions from other cell types were also examined: chondroblasts contained the 58,000 %%%dalton%%% subunit and cytoskeletons of skeletal muscle and %%%cardiac%%% muscle contained both 55,000 and 58,000 %%%dalton%%% proteins. Chick skin and rat kangaroo kidney Pt K2, cells had more complex subunit patterns which resemble prekeratin. The

%%%peptide%%% patterns resulting from proteolytic digestion of the 58,000 %%%dalton%%% protein of fibroblasts, the 55,000 %%%dalton%%% proteins of smooth muscle and Pt K2 cells and chick brain tubulin differed from one another. Two-dimensional electrophoresis of reconstituted gizzard smooth muscle 100 .ANG. filaments showed the 55,000 %%%dalton%%% subunit to be composed of 2 major components, differing in their isoelectric points. Antibodies prepared against electrophoretically purified 55,000 %%%dalton%%% subunit protein reacted in immunodiffusion against the original smooth muscle antigen and cytoskeletal fractions from skeletal and %%%cardiac%%% muscle, but not from fibroblasts, brain liver or skin cells. A specific antigenic determinant common to subunit proteins in smooth, skeletal and %%%cardiac%%% muscle, is therefore indicated. A previously described antibody against fibroblast subunit protein reacted weakly against smooth muscle filament protein in immunodiffusion revealing the presence of a common antigenic determinant between the 2 subunit proteins. These data demonstrate striking antigenic and primary structural differences in 100 .ANG. filament subunits from even such closely related cell types as fibroblasts and muscle cells.

6/7/25
DIALOG(R)File 5:Biosis Previews(R)

05354936 BIOSIS NO.: 197865015923
LACTO PEROXIDASE COUPLED IODINATION OF %%%CARDIAC%%% SARCOPLASMIC RETICULUM PROTEINS
AUTHOR: LOUIS C F (Reprint); KATZ A M
AUTHOR ADDRESS: DEP BIOCHEM, UNIV LEEDS, LEEDS, ENGL, UK**UK
JOURNAL: Biochimica et Biophysica Acta 494 (1): p255-265 1977
ISSN: 0006-3002
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The %%%peptide%%% compositions of rabbit skeletal muscle and canine %%%cardiac%%% muscle sarcoplasmic reticulum preparations were compared by polyacrylamide gel electrophoresis in the presence of sodium dodecyl sulfate. The %%%cardiac%%% preparations contained many proteins in addition to the 105,000 %%%dalton%%% %%%peptide%%% which was identified as the Ca2+ stimulated ATPase. Four %%%peptide%%% components iodinated in the presence of either free or Sepharose 4B-bound lactoperoxidase had MW of 130,000 (component I), 105,000 (component, II), 52,000 (component III) and 47,000 (component IV). Comparison of the labeling patterns in the presence of the detergent Triton X-100 suggested that components I, III and IV had part of their %%%peptide%%% internally located. Although part of component II was externally accessible to free lactoperoxidase, its iodination was decreased by Triton X-100. Iodination of phospholamban, the 22,000 %%%dalton%%% substrate for cyclic AMP-dependent protein kinase, was not observed.

6/7/26
DIALOG(R)File 5:Biosis Previews(R)

05208654 BIOSIS NO.: 197764057010

GROUP A STREPTOCOCCAL ANTIGENS CROSS REACTIVE WITH MYO CARDIUM PURIFICATION OF HEART REACTIVE ANTIBODY AND ISOLATION AND CHARACTERIZATION OF THE STREPTOCOCCAL ANTIGEN
AUTHOR: VAN DE RIJN I; ZABRISKIE J B; MCCARTY M
JOURNAL: Journal of Experimental Medicine 146 (2): p579-599 1977
ISSN: 0022-1007
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Unspecified

ABSTRACT: Heart-reactive antibody (HRA) appears in the sera of experimental animals inoculated with group A streptococci as well as patients with acute rheumatic fever. Adsorption of either serum with group A streptococcal membranes will remove the HRA. Blocking experiments between these 2 types of HRAs demonstrated that the antibodies are directed towards different antigenic determinants on the same or different molecules. To isolate and purify the antigen from the group A streptococcus cross-reactive with sarcolemmal sheaths of %%%cardiac%%% myofibers, it was necessary to purify the HRA from rheumatic fever patients' sera. Isolated .gamma.-globulin containing all of the HRA was adsorbed onto human sarcolemmal sheaths. The specific HRA was released by using KI. Over 99% of the purified HRA bound the sarcolemmal sheath, whereas less than 1% of the antibody would bind nonspecifically to other material. Preparations of group A streptococcal membrane will bind HRA purified from the sera of acute rheumatic patients at levels of 97% or greater. The cross-reactive antigen solubilized by nonionic detergent was purified 120-fold by column chromatography. On sodium dodecyl sulfate polyacrylamide electrophoresis, the antigen was demonstrated to be composed of 4 polypeptides with MW of 32,000, 28,000, 26,000 and 22,000 %%%daltons%%%, respectively. Only proteolytic enzymes could destroy the antigenic determinant, whereas glycosidases and lipases had no effect. The purified antigen blocked the binding of purified HRA to normal human heart sections.

6/7/27

05185251 BIOSIS NO.: 197764033607
N TERMINAL AND C TERMINAL AMINO-ACIDS OF PURIFIED ALPHA ACTININ
AUTHOR: SINGH I; GOLL D E; ROBSON R M; STROMER M H
JOURNAL: Biochimica et Biophysica Acta 491 (1): p29-45 1977
ISSN: 0006-3002
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Unspecified

ABSTRACT: Highly purified bovine %%%cardiac%%% .alpha.-actinin was obtained by successive chromatography on DEAE-cellulose and hydroxyapatite of a crude fraction obtained by salting out low ionic strength extracts of bovine %%%cardiac%%% muscle 0-30% ammonium sulfate saturation. Hydroxyapatite chromatography removed a 43,000 %%%dalton%%% polypeptide chain that was difficult to remove by successive DEAE-cellulose columns. Removal of all 43,000 %%%dalton%%% material by hydroxyapatite chromatography was accompanied by disappearance of a very small 9-10 S [Svedberg unit] boundary in analytical ultracentrifuge diagrams of

DEAE-cellulose-purified 6.2S .alpha.-actinin. Approximately 95% of the protein in DEAE-cellulose and hydroxyapatite-purified .alpha.-actinin was the 100,000 %%%dalton%%% .alpha.-actinin polypeptide as estimated by SDS[sodium dodecyl sulfate]-polyacrylamide gel electrophoresis. Purified bovine %%%cardiac%%%, porcine skeletal, chicken gizzard and chicken breast .alpha.-actinins all contained leucine as the C-terminal amino acid of both polypeptide chains in the .alpha.-actinin molecule. Bovine %%%cardiac%%% and porcine skeletal .alpha.-actinins contained arginine as the amino acid penultimate to C-terminal leucine. None of the 4 different .alpha.-actinins studied had a N-terminal amino group available for reaction with dansyl chloride, but all 4 .alpha.-actinins contained 1.6-1.8 acetate residues per molecule (200,000 %%%daltons%%%) of .alpha.-actinin. The N-terminal amino groups of both polypeptide chains in these 4 .alpha.-actinins were acetylated. A %%%peptide%%% having the composition N-Ac-Asp2-Glu4 was isolated from a proteolytic digest of bovine %%%cardiac%%% .alpha.-actinin. .alpha.-Actinin seems to be a conserved protein molecule found in many different motile systems.

? t s9/7/1

9/7/1
DIALOG(R)File 5:Biosis Previews(R)

19384505 BIOSIS NO.: 200700044246
Mechanically activated channel blocker
AUTHOR: Anonymous; Sachs Frederick; Suchyna Thomas; Johnson Janice
AUTHOR ADDRESS: Eden, NY USA**USA
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents OCT 24 2006 2006
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The present invention discloses a %%%peptide%%% of SEQ ID NO:2 and its variants that blocks stretch-activated ion channels. The %%%peptide%%%, designated as GsMTx-4, is present in the venom of the spider Grammostola spatulata. The present invention also discloses a method of purifying the %%%peptide%%% GsMTx-4 from the spider venom and a method for inhibition of stretch activated ion channels in a cell. The cDNA sequence encoding the GsMTx-4 is also disclosed. This %%%peptide%%% and its variants can be used for the treatment of %%%cardiac%%% arrhythmias.

? t s10/7/1-3

10/7/1
DIALOG(R)File 5:Biosis Previews(R)

19384505 BIOSIS NO.: 200700044246
Mechanically activated channel blocker
AUTHOR: Anonymous; Sachs Frederick; Suchyna Thomas; Johnson Janice

AUTHOR ADDRESS: Eden, NY USA**USA
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents OCT 24 2006 2006
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The present invention discloses a %%%peptide%%% of SEQ ID NO:2 and its variants that blocks stretch-activated ion channels. The %%%peptide%%%, designated as GsMTx-4, is present in the venom of the spider Grammostola spatulata. The present invention also discloses a method of purifying the %%%peptide%%% GsMTx-4 from the spider venom and a method for inhibition of stretch activated ion channels in a cell. The cDNA sequence encoding the GsMTx-4 is also disclosed. This %%%peptide%%% and its variants can be used for the treatment of cardiac arrhythmias.

10/7/2
DIALOG(R)File 5:Biosis Previews(R)

17516922 BIOSIS NO.: 200300485641
Nuclear targeted %%%peptide%%% %%%nucleic%%% acid oligomer
AUTHOR: Lane Kirk B (Reprint)
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1274 (4): Sep. 23, 2003 2003
MEDIUM: e-file
ISSN: 0098-1133 _(ISSN print)
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A %%%composition%%% comprising a nuclear localization sequence and a %%%peptide%%% %%%nucleic%%% acid oligomer (NLS-PNA) is described. Uses of the %%%composition%%% include, but are not limited to: regulation of gene expression, gene therapy, and the production of pharmaceutical %%%nucleic%%% acids and proteins. In addition, the NLS-PNA is useful for scientific and therapeutic transfection and expression of %%%nucleic%%% acids in cells types that previously were resistant to transfection and therapy including quiescent cells, differentiated cells, embryonic stem cells, and eukaryotic cells with intact nuclear membranes. The NLS-PNA can be combined with a membrane transport sequence (MTS) forming a novel compound referred to as an MTS-NLS-PNA wherein the MTS provides transport through the cytoplasmic membrane of a cell. A nuclear targeted %%%peptide%%% %%%nucleic%%% acid oligomer is useful for the treatment of genetic based diseases and diseases that can be treated genetically including %%%heart%%% disease, cancer, cerebrovascular diseases, chronic pulmonary diseases, human immunodeficiency virus, and other diseases, conditions and disorders.

10/7/3
DIALOG(R)File 5:Biosis Previews(R)

16446057 BIOSIS NO.: 200200039568

Nuclear targeted %%%peptide%%% %%%nucleic%%% acid oligomer
AUTHOR: Lane Kirk B
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1252 (1): Nov. 6, 2001 2001
MEDIUM: e-file
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A %%%composition%%% comprising a nuclear localization sequence and a %%%peptide%%% %%%nucleic%%% acid oligomer (NLS-PNA) is described. Uses of the %%%composition%%% include, but are not limited to: regulation of gene expression, gene therapy, and the production of pharmaceutical %%%nucleic%%% acids and proteins. In addition, the NLS-PNA is useful for scientific and therapeutic transfection and expression of %%%nucleic%%% acids in cells types that previously were resistant to transfection and therapy including quiescent cells, differentiated cells, embryonic stem cells, and eukaryotic cells with intact nuclear membranes. The NLS-PNA can be combined with a membrane transport sequence (MTS) forming a novel compound referred to as an MTS-NLS-PNA wherein the MTS provides transport through the cytoplasmic membrane of a cell. A nuclear targeted %%%peptide%%% %%%nucleic%%% acid oligomer is useful for the treatment of genetic based diseases and diseases that can be treated genetically including %%%heart%%% disease, cancer, cerebrovascular diseases, chronic pulmonary diseases, human immunodeficiency virus, and other diseases, conditions and disorders.

? t s2/7/1-6

2/7/1
DIALOG(R)File 5:Biosis Previews(R)

16302077 BIOSIS NO.: 200100473916
Crystal structure of human epidermal growth factor and its dimerization
AUTHOR: Lu He-Shu; Chai Ji-Jie; Li Ming; Huang Bing-Ren; He Cun-Heng; Bi Ru-Chang (Reprint)
AUTHOR ADDRESS: Institute of Biophysics, Chinese Academy of Sciences, Beijing, 100101, China**China
JOURNAL: Journal of Biological Chemistry 276 (37): p34913-34917 September 14, 2001 2001
MEDIUM: print
ISSN: 0021-9258
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Epidermal growth factor (EGF) is a typical %%%growth%%%-%%%stimulating%%% %%%peptide%%% and functions by binding to specific cell-surface receptors and inducing dimerization of the receptors. Little is known about the molecular mechanism of EGF-induced dimerization of EGF receptors. The crystal structure of human EGF has been determined at pH 8.1. There are two human EGF molecules A and B in the asymmetric unit of the crystals, which form a potential dimer. Importantly, a number of residues known to be indispensable for EGF binding to its receptor are

involved in the interface between the two EGF molecules, suggesting a crucial role of EGF dimerization in the EGF-induced dimerization of receptors. In addition, the crystal structure of EGF shares the main features of the NMR structure of mouse EGF determined at pH 2.0, but structural comparisons between different models have revealed new detailed features and properties of the EGF structure.

2/7/2
DIALOG(R)File 5:Biosis Previews(R)

15908917 BIOSIS NO.: 200100080756'
Purification and identification of a %%%growth%%%-%%%stimulating%%% %%%peptide%%% for Bifidobacterium bifidum from natural rubber serum powder
AUTHOR: Etoh Shin-ichi; Asamura Kayoko; Obu Azumi; Sonomoto Kenji; Ishizaki Ayaaki (Reprint)
AUTHOR ADDRESS: Laboratory of Microbial Science and Technology, Division of Bioscience and Biotechnology, Graduate School of Bioresource and Bioenvironmental Sciences, Kyushu University, 6-10-1 Hakozaki, Higashi-ku, Fukuoka, 812-8581, Japan**Japan
JOURNAL: Bioscience Biotechnology and Biochemistry 64 (10): p2083-2088 October, 2000 2000
MEDIUM: print
ISSN: 0916-8451
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Natural rubber serum powder, which is a by-product obtained in the production of latex rubber, has a strong growth-stimulating activity for Bifidobacterium bifidum JCM 1254. The retained fraction obtained by ultrafiltration (molecular weight cutoff 1000) showed a growth-stimulating activity in a dose-dependent manner on B12 assay medium with ammonium sulfate. One of the growth stimulators was purified from the retained fraction by acetone precipitation, solid-phase extraction with a hydrophobic pretreatment column, and multi-stage reversed-phase HPLC. An increase of 53-fold in the specific activity, and a recovery of 1.3% were obtained. The amino acid composition and N-terminal sequence analysis of this growth stimulator provided the structure of Ala-Thr-Pro-Glu-Lys-Glu-Glu-Pro-Thr-Ala. The molecular mass was 1075 by MALDI-TOF MS analysis. These results showed that this growth stimulator was a decapeptide with the sequence shown above. This is the first report that clarified the structure of an active peptide for the growth of Bifidobacterium.

2/7/3
DIALOG(R)File 5:Biosis Previews(R)

13524237 BIOSIS NO.: 199699158297
Isolation and characterization of a bacterial %%%growth%%%-%%%stimulating%%% %%%peptide%%% from a peptic bovine hemoglobin hydrolysate
AUTHOR: Zhao Q Y; Piot J M; Gautier V; Cottenceau G (Reprint)

AUTHOR ADDRESS: Laboratoire de Genie Proteique et Cellulaire, Universite de La Rochelle, Avenue Marillac, 17042 La Rochelle Cedex 01, France**France
JOURNAL: Applied Microbiology and Biotechnology 45 (6): p778-784 1996 1996
ISSN: 0175-7598
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A peptide with a bacterial-growth-stimulating activity was isolated from a bovine hemoglobin hydrolysate by reversed-phase high-performance liquid chromatography. Its primary structure and molecular mass, determined by amino acid analysis and fast-atom bombardment mass spectrometry, were identical to those of fragment 48-52 (Ser-Thr-Ala-Asp-Ala) of the beta chain of bovine hemoglobin. The microbiological tests in solid media demonstrated that this peptide exhibited a growth-stimulating activity on gram-negative bacteria.

2/7/4
DIALOG(R)File 5:Biosis Previews(R)

08851123 BIOSIS NO.: 198834080014
NEW POSSIBLE APPROACHES TO GROWTH MANIPULATION BY INTERFERENCE WITH THE HORMONAL CONTROL CIRCUIT
AUTHOR: JAHREIS G (Reprint); HESSE V
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JOURNAL: Monatshefte fuer Veterinaermedizin 42 (22): p805-809 1987
ISSN: 0026-9263
DOCUMENT TYPE: Article
RECORD TYPE: Citation
LANGUAGE: GERMAN

2/7/5
DIALOG(R)File 5:Biosis Previews(R)

08160401 BIOSIS NO.: 198682006788
ORAL ADMINISTRATION OF SYNTHETIC HUMAN UROGASTRONE PROMOTES HEALING OF CHRONIC DUODENAL ULCERS IN RATS
AUTHOR: OLSEN P S (Reprint); POULSEN S S; THERKELSEN K; NEXO E
AUTHOR ADDRESS: DEP SURGERY C 2122, RIGSHOSP, BELGDAMSVEJ 9, DK-2100 COPENHAGEN, DENMARK**DENMARK
JOURNAL: Gastroenterology 90 (4): p911-917 1986
ISSN: 0016-5085
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The effect of oral administration of synthetic human epidermal growth factor/urogastrone (EGF/URO) on healing of chronic duodenal ulcers induced by cysteamine in rats was investigated and compared with that of cimetidine, a H2-receptor antagonist. After 25 and 50 days of treatment, synthetic human EGF/URO significantly increased healing of chronic duodenal ulcers to the same extent as cimetidine. Combined treatment with synthetic human EGF/URO and cimetidine for 25 days was more effective

than synthetic human EGF/URO given alone, whereas combined treatment for 50 days was significantly more effective than cimetidine alone. These results show that a combination of an agent inhibiting gastric acid secretion and the cytoprotective and %%%growth%%%-%%%stimulating%%% %%%peptide%%% EGF/URO seems to be more effective with regard to duodenal ulcer healing than individual administration of the two substances. Synthetic human EGF/URO is a potent inhibitor of gastric acid secretion when administered intravenously, but had no effect on acid secretion when given intraduodenally, which suggests that the effect of synthetic human EGF/URO is a direct action on the duodenal mucosa. In conclusion, this study showed that oral synthetic human EGF/URO has a significant effect on healing of duodenal ulcers in rats. The amount of synthetic human EGF/URO administered is comparable to that found in saliva during stimulation of the salivary glands. Our results, therefore, suggest that EGF/URO is one of the endogenous factors participating in healing of duodenal ulcers.

2/7/6
DIALOG(R)File 5:Biosis Previews(R)

08146697 BIOSIS NO.: 198681110588
ERYTHROCYTE INSULIN BINDING IN PRETERM NEWBORN INFANTS
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JOURNAL: Pediatric Research 20 (3): p256-260 1986
ISSN: 0031-3998
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: To characterize the erythrocyte insulin receptor in newborn infants we studied the binding of 125I-insulin to the erythrocytes from 42 preterm infants (14 at birth, 14 aged 2-7 days, and 14 aged 8-16 days) with a mean gestational age of 34.1 wk, and from 32 term infants (16 at birth and 16 aged 2-7 days). The insulin binding to cord blood erythrocytes from preterm infants was significantly higher than that of cord blood cells from term infants and to postnatal cells from preterm as well as term infants. The erythrocytes from preterm infants aged 2-7 days bound more insulin than cells from preterm infants aged 8-16 days. The maximum insulin binding (specific insulin binding at tracer concentration of insulin) correlated negatively with the gestational age both at birth and over the 1st postnatal wk. In the preterm infants there was a strong negative correlation between the maximum insulin binding and postnatal age. The enhanced insulin binding to cord blood erythrocytes from preterm infants was due to both an increased receptor concentration and a high affinity for insulin. The increased affinity for insulin. The increased affinity persisted over the 1st wk of life. In preterm infants older than 1 wk the insulin binding characteristics were basically similar to those in term newborn infants. In all infants studied the receptor concentration seemed to be postnatal age dependent while the receptor affinity was gestational age dependent. No correlation was found between the insulin binding data and the plasma concentrations of immunoreactive insulin or C-peptide. The growth stimulatory effect of insulin in fetal life may be mediated by increased insulin binding to fetal cells, since preterm infants as birth have a high erythrocyte insulin binding capacity

which decreases with increasing gestational age. The postantal down-regulation of the erythrocyte insulin receptor in preterm infants may reflect the changing role of insulin from an intrauterine %%%growth%%% %%%stimulating%%% %%%peptide%%% to a hormone mainly regulating postnatal carbohydrate metabolism.

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4/7/1
DIALOG(R)File 5:Biosis Previews(R)

0019799371 BIOSIS NO.: 200700459112
Rationale and design of the 'F. I. R. E.' study
AUTHOR: Atar Dan (Reprint); Huber Kurt; Rupprecht Hans-Juergen; Kopecky Stephen L; Schwitter Juerg; Theek Carmen; Brandl Katherine; Henning Rainer; Geudelin Bernard
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JOURNAL: Cardiology 108 (2): p117-123 2007 2007
ITEM IDENTIFIER: doi:10.1159/000095982
ISSN: 0008-6312
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Immediate reopening of acutely occluded coronary arteries via primary percutaneous coronary intervention (PCI) is the treatment of choice to salvage the ischemic myocardium in the setting of ST-segment elevation myocardial infarction (STEMI). However, the sudden re-initiation of blood flow achieved with PCI can lead to a local acute inflammatory response with further endothelial and myocardial damage. This phenomenon, described as 'reperfusion injury', has been recognized for several decades, yet no pharmacologic intervention has so far succeeded in reducing myocardial damage linked to %%%reperfusion%%%. FX06 is a naturally occurring %%%peptide%%% derived from the neo-N-terminus of fibrin (B beta(15-42)). It prevents leukocyte migration through the gap junctions of endothelial cells. Experimental studies have shown that FX06 inhibits the binding of the proinflammatory fibrin E1 fragment to VE-cadherin expressed in the adherence junction. It represents a novel approach to reducing local and systemic inflammation, including myocardial reperfusion injury, in the adherens junction. The present multicenter, double-blind, randomized, placebo-controlled study is designed to test the hypothesis that FX06 injection during and immediately after primary PCI can reduce infarct size in patients with STEMI. The primary outcome measure of efficacy in this study is the degree of myocardial salvage calculated as the difference between the perfusion defect before and after PCI, determined by myocardial perfusion scintigraphy during rest. Further, infarct size at the end of the index hospitalization, as well as at 4 months, will be measured by %%%cardiac%%% magnetic resonance imaging. The present position paper describes the rationale, design and the methods utilized in this trial. Copyright (c) 2007 S. Karger AG, Basel.

4/7/2
DIALOG(R)File 5:Biosis Previews(R)

0019464990 BIOSIS NO.: 200700124731
PAR2 activation at reperfusion salvages myocardium via ERK 1/2 pathway in in vivo rat hearts
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JOURNAL: Circulation 114 (18, Suppl. S): p1202 OCT.31 2006 2006
CONFERENCE/MEETING: 79th Annual Scientific Session of the American-Heart-Association Chicago, IL, USA November 12 -15, 2006; 20061112
SPONSOR: Amer Heart Assoc
ISSN: 0009-7322
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Protease activated receptor-2 (PAR2), a seven transmembrane G protein coupled receptor, is expressed on endothelial cells and cardiomyocytes, and overexpressed in these cells under pathological conditions. However the role of PAR2 in in vivo myocardial ischemia-reperfusion has not yet been determined. Objective: This study tested the hypothesis that 1) PAR2 activation with the specific PAR2 agonist peptide (PAR2 AP) SLIGRL reduces myocardial infarct size following ischemia - reperfusion in vivo, and 2) this cardioprotection involves the ERK 1/2 signaling pathway. Methods: Rats were randomly assigned to one of 8 groups with 30 minutes left coronary artery (LCA) occlusion followed by 3 hours reperfusion: (1) control with equal volume of saline; (2) Vehicle (DMSO), 300 mu l/ Kg 10 minutes before reperfusion; (3) PAR2 AP: 1 mg/ kg intravenously 5 minutes before %%%reperfusion%%%;(4) scrambled %%%peptide%%%: 1 mg/kg 5 minutes before reperfusion;(5) the ERK 1/2 inhibitor PD 98059 (PD) alone, 0.3 mg/kg 10 minutes before reperfusion; (6) the PI3-K inhibitor Ly 294002 (Ly) alone, 0.3 mg/kg 10 minutes before reperfusion; (7) PD + PAR2 AP: PD 0.3 mg/kg 5 minutes before PAR2 AP; (8) Ly + PAR2 AP: Ly 0.3 mg/kg 5 minutes before PAR2 AP. Infarct size was determined by TTC, presented as a percentage of the area at risk (AN/AAR). In a separate set of experiments for Western blot analysis, rats were subjected to 30 minutes LCA occlusion and 5 minutes reperfusion with no treatment (sham), control, scrambled peptide and PAR2 AP to quantify phosphorylation of Akt and ERK 1/2 in the AAR myocardium. Results: PAR2 AP significantly reduced infarct size compared to control (36 +/- 2%* vs 53 +/- 1 %) and scrambled peptide had no effect on infarct size (53 +/- 3%). Western blot analysis demonstrated that PAR2 AP administration significantly increased phosphorylation of ERK 1/2 in AAR myocardium at 5 minutes reperfusion, but not phosphorylation of Akt. Accordingly, the infarct size sparing effect of PAR2 AP was abolished by PD 98059 (PAR2 AP: 36 +/- 2% vs PD + PAR2 AP: 50 +/- 1%, $p < 0.05$) but not by Ly294002 (PAR2 AP: 36 +/- 2% vs Ly + PAR2 AP: 38 +/- 3%, $p > 0.05$). Conclusions: Specific PAR2 activation is cardioprotective in the in vivo rat %%%heart%%% ischemia-reperfusion model, and this protection involves the ERK 1/2 pathway. * = $p < 0.05$ vs Control.

4/7/3
DIALOG(R)File 5:Biosis Previews(R)

18630504 BIOSIS NO.: 200510325004
Formyl-peptide receptor is not involved in the protection afforded by annexin 1 in marine acute myocardial infarct
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JOURNAL: FASEB Journal 19 (4, Suppl. S, Part 1): pA707 MAR 4 2005 2005
CONFERENCE/MEETING: Experimental Biology 2005 Meeting/35th International Congress of Physiological Sciences San Diego, CA, USA March 31 -April 06, 2005; 20050331
SPONSOR: Amer Assoc Anatomists
Amer Assoc Immunologists
Amer Physiol Soc
Amer Soc Biochem & Mol Biol
Amer Soc Investigat Pathol
Amer Soc Nutr Sci
Amer Soc Pharmacol & Expt Therapeut
Int Union Physiol Sci
ISSN: 0892-6638
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Recent interest in the annexin I field has come from the notion that specific G-protein-coupled receptors, members of the formyl-peptide receptor (FPR) family, appear to mediate the anti-inflammatory actions of this endogenous mediator. Administration of the annexin 1 N-terminal derived peptide Ac2-26 to mice after 25 min ischemia significantly attenuated the extent of acute myocardial injury as assessed 60 min post-%%%reperfusion%%%, and %%%peptide%%% Ac2-26 %%%cardio%%%-protection was intact in FPR null mice. Peptide Ac2-26 inhibition of specific markers of %%%heart%%% injury (specifically myeloperoxidase activity, CXC chemokine KC contents and endogenous annexin I protein expression) was virtually identical in %%%heart%%% samples collected from wild type and FPR null mice. Mouse myocardium expressed the mRNA for FPR and the structurally related lipoxin A4 receptor, termed ALX; thus, comparable equimolar doses of two ALX agonists (W peptide and a stable lipoxin A4 analogue) exerted an equivalent degree of %%%cardio%%%-protection in wild type and FPR null mice. Thus, this study sheds light on the receptor mechanism(s) mediating annexin 1 -induced %%%cardio%%%-protection, and show a pivotal role for ALX, whereas exclude any functional involvement of mouse FPR. These mechanistic data can help in developing novel therapeutics for acute %%%cardio%%%-protection.

4/7/4
DIALOG(R)File 5:Biosis Previews(R)

18624856 BIOSIS NO.: 200510319356
Protein kinase C delta (PKC delta+) peptide activator exerts cardioprotective effects in ischemia/reperfusion (I/R) injury
AUTHOR: Jivani Manoj A (Reprint); Adams Jovan S; Dawley Michael; Hart

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JOURNAL: FASEB Journal 19 (5, Suppl. S, Part 2): pA1213 MAR 7 2005 2005
CONFERENCE/MEETING: Experimental Biology 2005 Meeting/35th International Congress of Physiological Sciences San Diego, CA, USA March 31 -April 06, 2005; 20050331
SPONSOR: Amer Assoc Anatomists
Amer Assoc Immunologists
Amer Physiol Soc
Amer Soc Biochem & Mol Biol
Amer Soc Investigat Pathol
Amer Soc Nutr Sci
Amer Soc Pharmacol & Expt Therapeut
Int Union Physiol Sci
ISSN: 0892-6638
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Ischemia followed by reperfusion in the presence of polymorphonuclear leukocytes (PMNs) results in a marked %%%cardiac%%% contractile dysfunction. Inhibition of superoxide (SO) release from PMNs preserves %%%cardiac%%% contractile function following I/R. A cell-permeable PKC delta peptide activator (MW = 1130) negatively regulates SO release when given to PMNs. We studied isolated rat hearts following ischemia (20 minutes) and reperfusion (45 minutes) in the presence of activated PMNs. In hearts subjected to I/R and reperfused with PMNs in the presenceof PKC delta+ (10 mu M, n = 6), left ventricular developed pressure (LVDP) and the maximal rate of LVDP (+dP/dt(max)) recovered to 83% +/- 3% and 79% +/- 5% of baseline values, respectively, at 45 minutes post reperfusion. I/R hearts receiving PMNs alone (n = 8) recovered to 47% +/- 9% and 45% +/- 8% of baseline values for LVDP and +dP/dt(max) respectively. The effect of PKC delta+ on LVDP and +dP/dt(max) was significant (P < 0.05) compared with I/R + PMN hearts at 15-45 minutes post %%%reperfusion%%%. PKC 6 %%%peptide%%% activator (10 mu M, n = 11) significantly inhibited superoxide release from phorbol 12-myristate 13-acetate stimulated PMN's by 34% +/- 4% (P < 0.05). These results suggest that PKC delta peptide activator attenuates PMN-induced post I/R %%%cardiac%%% contractile dysfunction in part by inhibiting superoxide release from PMNs.

4/7/5
DIALOG(R)File 5:Biosis Previews(R)

18508692 BIOSIS NO.: 200510203192
Translocation of delta PKC to mitochondria during %%%cardiac%%% reperfusion enhances superoxide anion production and induces loss in mitochondrial function
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JOURNAL: Archives of Biochemistry and Biophysics 439 (2): p194-199 JUL 15 2005 2005

ISSN: 0003-9861
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Activation of the delta-isoform of protein kinase C (delta PKC) by certain conditions of oxidative stress results in translocation of the kinase to the mitochondria leading to release of cytochrome c and the induction of apoptosis. In the current study, the effects of myocardial reperfusion-induced delta PKC translocation on mitochondrial function were assessed. Mitochondria isolated from hearts that had undergone ischemia (30 min) followed by reperfusion (15 min) exhibited a significant increase in the rate of superoxide anion (O-2(-center dot)) generation. This was associated with the translocation of delta PKC to the mitochondria within the first 5 min of reperfusion. delta PKC translocation occurred exclusively during reperfusion and could be mimicked by infusion of intact hearts with H2O2 suggesting redox-dependent activation during %%%reperfusion%%%. Infusion of a %%%peptide%%% inhibitor (delta V1-1) specific to the delta-isoform of PKC significantly reduced reperfusion-induced increases in mitochondrial O-2(-center dot) generation. Finally, the decline in mitochondrial respiratory activity evident upon prolonged reperfusion (120 min) was completely prevented by inhibition of delta PKC translocation. Thus, delta PKC represents a cytosolic redox-sensitive molecule that plays an important role in amplification of O-2(-center dot) production and subsequent declines in mitochondrial function during reperfusion, (c) 2005 Elsevier Inc. All rights reserved.

4/7/6
DIALOG(R)File 5:Biosis Previews(R)

18326467 BIOSIS NO.: 200510020967
Cardioprotection mediated by urocortin is dependent upon PKCF epsilon activation
AUTHOR: Lawrence Kevin M (Reprint); Kabir Alamgir M N; Bellahcene Mohamed; Davidson Sean; Mesquita Rui S; Cao Xuebin; McCormick James; Carroll Christopher J; Chanalaris Anastasios; Townsend Paul A; Hubank Mike; Stephanou Anastasis; Knight Richard A; Marber Michael S; Latchman David S
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JOURNAL: FASEB Journal 19 (3): MAR 05 2005
ISSN: 0892-6638
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Urocortin (Ucn) is an endogenous cardioprotective agent that protects against the damaging effects of ischemia and reperfusion injury in vitro and in vivo. We have found that the mechanism of action of Ucn involves both acute activation of specific target molecules, and using Affymetrix (Santa Clara, CA) gene chip technology, altered gene expression of different end effector molecules. Here, from our gene chip data, we show that after a 24 h exposure to Ucn, there was a specific increase in mRNA and protein levels of the protein kinase C epsilon (PKC

epsilon) isozyme in primary rat cardiomyocytes compared with untreated cells and in the Langendorff perfused ex vivo %%%heart%%%. Furthermore, a short 10 min exposure of these cells to Ucn caused a specific translocation/activation of PKC epsilon, in vitro and in the Langendorff perfused ex vivo %%%heart%%%. The importance of the PKC epsilon, isozyme in cardioprotection and its relationship to cardioprotection produced by Ucn was assessed using PKC epsilon-specific inhibitor peptides. The inhibitor peptide, when introduced into cardiomyocytes, caused an increase in apoptotic cell death compared with control peptide after ischemia and %%%reperfusion%%%. When the inhibitor %%%peptide%%% was present with Ucn, the cardioprotective effect of Ucn was lost. This loss of cardioprotection by Ucn was also seen in whole hearts from PKC epsilon, knockout mice. These findings indicate that the cardioprotective effect of Ucn is dependent upon PKC epsilon.

4/7/7

18283810 BIOSIS NO.: 200500190875

The fibrin-derived peptide Bbeta15-42 protects the myocardium against ischemia-reperfusion injury

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JOURNAL: Nature Medicine 11 (3): p298-304 March 2005 2005
MEDIUM: print
ISSN: 1078-8956 _(ISSN print)
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: In the event of a myocardial infarction, current interventions aim to reopen the occluded vessel to reduce myocardial damage and injury. Although reperfusion is essential for tissue salvage, it can cause further damage and the onset of inflammation. We show a novel anti-inflammatory effect of a fibrin-derived peptide, Bbeta15-42. This peptide competes with the fibrin fragment N-terminal disulfide knot-II (an analog of the fibrin E1 fragment) for binding to vascular endothelial (VE)-cadherin, thereby preventing transmigration of leukocytes across endothelial cell monolayers. In acute or chronic rat models of myocardial ischemia-reperfusion injury, Bbeta15-42 substantially reduces leukocyte infiltration, infarct size and subsequent scar formation. The pathogenic role of fibrinogen products is further confirmed in fibrinogen knockout mice, in which infarct size was substantially smaller than in wild-type animals. Our findings conclude that the interplay of fibrin fragments, leukocytes and VE-cadherin contribute to the pathogenesis of myocardial damage and %%%reperfusion%%% injury. The naturally occurring %%%peptide%%% Bbeta15-42 represents a potential candidate for reperfusion therapy in humans.

4/7/8

DIALOG(R)File 5:Biosis Previews(R)

18052972 BIOSIS NO.: 200400423761
Cell-permeable peptide antioxidants targeted to inner mitochondrial membrane inhibit mitochondrial swelling, oxidative cell death, and reperfusion injury
AUTHOR: Zhao Kesheng; Zhao Guo-Min; Wu Dunli; Soong Yi; Birk Alex V; Schiller Peter W; Szeto Hazel H (Reprint)
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JOURNAL: Journal of Biological Chemistry 279 (33): p34682-34690 August 13, 2004 2004
MEDIUM: print
ISSN: 0021-9258
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Reactive oxygen species (ROS) play a key role in promoting mitochondrial cytochrome c release and induction of apoptosis. ROS induce dissociation of cytochrome c from cardiolipin on the inner mitochondrial membrane (IMM), and cytochrome c may then be released via mitochondrial permeability transition (MPT)dependent or MPT-independent mechanisms. We have developed peptide antioxidants that target the IMM, and we used them to investigate the role of ROS and MPT in cell death caused by t-butylhydroperoxide (tBHP) and 3-nitropropionic acid (3NP). The structural motif of these peptides centers on alternating aromatic and basic amino acid residues, with dimethyltyrosine providing scavenging properties. These peptide antioxidants are cell-permeable and concentrate 1000-fold in the IMM. They potently reduced intracellular ROS and cell death caused by tBHP in neuronal N2A cells (EC50 in nM range). They also decreased mitochondrial ROS production, inhibited MPT and swelling, and prevented cytochrome c release induced by Ca2+ in isolated mitochondria. In addition, they inhibited 3NP-induced MPT in isolated mitochondria and prevented mitochondrial depolarization in cells treated with 3NP. ROS and MPT have been implicated in myocardial stunning associated with %%%reperfusion%%% in ischemic hearts, and these %%%peptide%%% antioxidants potently improved contractile force in an ex vivo %%%heart%%% model. It is noteworthy that peptide analogs without dimethyltyrosine did not inhibit mitochondrial ROS generation or swelling and failed to prevent myocardial stunning. These results clearly demonstrate that overproduction of ROS underlies the cellular toxicity of tBHP and 3NP, and ROS mediate cytochrome c release via MPT. These IMM-targeted antioxidants may be very beneficial in the treatment of aging and diseases associated with oxidative stress.

4/7/9
DIALOG(R)File 5:Biosis Previews(R)

17995007 BIOSIS NO.: 200400365796
Adrenomedullin - What do we know 10 years since its discovery?
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JOURNAL: Polish Journal of Pharmacology 56 (1): p5-27 January 2004 2004
MEDIUM: print
ISSN: 1230-6002
DOCUMENT TYPE: Article; Literature Review
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Adrenomedullin (ADM) is a 52-amino acid peptide with structural homology to calcitonin gene-related peptide (CGRP) initially isolated from human pheochromocytoma. ADM is synthesized by many mammalian tissues including the adrenal medulla, endothelial and vascular smooth muscle cells, myocardium and central nervous system. ADM binds to plasma membrane receptors composed of calcitonin receptor-like receptor (CRLR), a member of serpentine receptor superfamily, and receptor activity modifying protein (RAMP) type 2 or 3. ADM has also some affinity for CGRP1 receptor composed of CRLR and RAMP1. ADM dilates blood vessels in both endothelium-dependent and independent manner and decreases systemic arterial pressure. Intrarenally administered ADM increases natriuresis by vascular and tubular mechanisms. In addition, ADM inhibits migration and proliferation of vascular smooth muscle cells and attenuates myocardial remodelling by inhibiting protein synthesis in cardiomyocytes and proliferation of %%%cardiac%%% fibroblasts. ADM is expressed in various tissues from early stage of embryogenesis and is also synthesized in placenta, uterus and fetal membranes. Plasma ADM level is increased in arterial hypertension, acute coronary syndromes, %%%heart%%% failure, renal diseases and septic shock, being involved in the pathophysiology of these disorders. Experimental ADM treatment is beneficial in arterial and pulmonary hypertension, %%%heart%%% failure, septic shock and ischemia/ %%%reperfusion%%% injury. Proadrenomedullin N-terminal %%%peptide%%% (PAMP) is another product of ADM gene which is co-secreted by ADM-producing tissues, with some effects similar and some opposite to ADM.

4/7/10
DIALOG(R)File 5:Biosis Previews(R)

17321568 BIOSIS NO.: 200300276101
Amelioration of ischemia-%%%reperfusion%%% injury with cyclic %%%peptide%%% blockade of ICAM-1.
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JOURNAL: American Journal of Physiology 284 (4 Part 2): pH1260-H1268 April 2003 2003
MEDIUM: print
ISSN: 0002-9513 _(ISSN print)
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Neutrophils are pivotal in the pathogenesis of ischemia-reperfusion (I/R) injury leading to muscle damage. Firm adhesion

of neutrophils to the endothelium is initiated by an interaction between intercellular adhesion molecular-1 (ICAM-1) on the endothelium and beta2-integrins on neutrophils. Inhibition of ICAM-1-dependent binding using monoclonal antibodies has been shown to be efficacious in ameliorating I/R injury by preventing the influx of neutrophils into the ischemic tissue. We recently described a cyclic peptide that is a potent and selective inhibitor of ICAM-1 (IP25) in vitro. In this study, we tested the hypothesis that IP25-mediated blockade of ICAM-1 would inhibit neutrophil influx during reperfusion of ischemic tissue and consequently attenuate muscle injury in a tourniquet hindlimb murine model of I/R injury. Varying amounts of peptide drug were injected at the beginning of the reperfusion period. The neutrophil influx and size of infarction at the end of 2 h of reperfusion were compared with those in untreated control mice and contralateral nonischemic limbs. Mice receiving IP25 immediately before reperfusion showed a 56% reduction in neutrophil infiltration in the ischemic muscle, accompanied by a 40% reduction in the infarct size. No effect on I/R injury was seen if IP25 administration was delayed for 60 min after reperfusion. We conclude that IP25 effectively inhibits ICAM-1-mediated adhesion of neutrophils to the endothelium in mice leading to a protective effect and suggests that synthetic peptide antagonists have a potential role as therapeutic tools.

16997227 BIOSIS NO.: 200200590738
Urocortin protects the %%%heart%%% from reperfusion injury via upregulation of p42/p44 MAPK signaling pathway
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JOURNAL: American Journal of Physiology 283 (4 Part 2): pH1481-H1488 October, 2002 2002
MEDIUM: print
ISSN: 0002-9513
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Reperfusion of ischemic myocardium is essential for tissue salvage but paradoxically contributes to cell death. We hypothesized that activation of potential survival pathways such as p42/p44 MAPK may prevent lethal %%%reperfusion%%% injury. Urocortin is a %%%peptide%%% factor that affects the p42/p44 MAPK signaling pathway. Both isolated and in vivo rat %%%heart%%% models were used to examine the potential for urocortin to prevent reperfusion injury. Isolated rat hearts underwent 35-min regional ischemia and 2-h reperfusion, with urocortin perfused for 20 min from the onset of reperfusion. In the in vivo study, urocortin was administered as an intravenous bolus 3 min before reperfusion with a protocol of 25-min regional ischemia and 2-h reperfusion. Blockade of the p42/p44 MAPK pathway with the inhibitor PD-98059 was used in both models. Urocortin attenuated lethal reperfusion-induced injury both in vitro and in vivo via a p42/p44 MAPK-dependent mechanism. Furthermore, Western blot analysis demonstrated the ability of urocortin to directly upregulate

this signaling pathway. In conclusion, we believe that the p42/p44 MAPK-dependent signaling pathway represents an important survival mechanism against reperfusion injury.

4/7/12
DIALOG(R)File 5:Biosis Previews(R)

15482237 BIOSIS NO.: 200000200550
Protease-activated receptor-2 modulates myocardial ischemia-reperfusion injury in the rat %%%heart%%%
AUTHOR: Napoli Claudio; Cicala Carla; Wallace John L; de Nigris Filomena; Santagada Vincenzo; Caliendo Giuseppe; Franconi Flavia; Ignarro Louis J; Cirino Giuseppe (Reprint)
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JOURNAL: Proceedings of the National Academy of Sciences of the United States of America 97 (7): p3678-3683 March 28, 2000 2000
MEDIUM: print
ISSN: 0027-8424
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Protease-activated receptor-2 (PAR-2) is a member of seven transmembrane domain G protein-coupled receptors activated by proteolytic cleavage whose better known member is the thrombin receptor. The pathophysiological role of PAR-2 remains poorly understood. Because PAR-2 is involved in inflammatory and injury response events, we investigated the role of PAR-2 in experimental myocardial ischemia-reperfusion injury. We show for the first time that PAR-2 activation protects against %%%reperfusion%%%-injury. After PAR-2-activating %%%peptide%%% (2AP) infusion, we found a significant recovery of myocardial function and decrease in oxidation at reflow. Indeed, the glutathione cycle (glutathione and oxidized glutathione) and lipid peroxidation analysis showed a reduced oxidative reperfusion-injury. Moreover, ischemic risk zone and creatine kinase release were decreased after PAR-2AP treatment. These events were coupled to elevation of PAR-2 and tumor necrosis factor alpha (TNFalpha) expression in both nuclear extracts and whole %%%heart%%% homogenates. The recovery of coronary flow was not reverted by L-nitroarginine methylester, indicating a NO-independent pathway for this effect. Genistein, a tyrosine kinase inhibitor, did not revert the PAR-2AP effect. During early reperfusion injury in vivo not only oxygen radicals are produced but also numerous proinflammatory mediators promoting neutrophil and monocyte targeting. In this context, we show that TNFalpha and PAR-2 are involved in signaling in pathophysiological conditions, such as myocardial ischemia-reperfusion. At the same time, because TNFalpha may exert pro-inflammatory actions and PAR-2 may constitute one of the first protective mechanisms that signals a primary inflammatory response, our data support the concept that this network may regulate body responses to tissue injury.

4/7/13
DIALOG(R)File 5:Biosis Previews(R)

12147109 BIOSIS NO.: 199497168394
Coronary %%%reperfusion%%% enhances recovery of atrial natriuretic %%%peptide%%% secretion: Salvaging endocrine function in patients with acute right ventricular infarction
AUTHOR: Yasuda Satoshi; Nonogi Hiroshi (Reprint); Miyazaki Shunichi; Goto Yoichi; Haze Kazuo
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JOURNAL: Circulation 89 (2): p558-566 1994 1994
ISSN: 0009-7322
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background The %%%heart%%% has been demonstrated not only to be a pumping organ but also an endocrine organ secreting atrial natriuretic peptide (ANP). We hypothesized that myocardial ischemia may affect ANP secretion and that reperfusion therapy for acute myocardial infarction can preserve endocrine function of the %%%heart%%%. Methods and Results Twenty patients with acute right ventricular infarction were examined who underwent reperfusion therapy on admission. These patients had proximal occlusion of the dominant right coronary artery involving the right atrial branches: 9 patients with successful reperfusion (SRP group) and the remaining 11 patients with unsuccessful reperfusion (URP group). Within 24 hours after the onset of infarction, a volume loading test was performed after reperfusion therapy with measurements for plasma ANP levels and hemodynamics. Before the volume loading test, the plasma ANP level and mean right atrial pressure were similar between these two groups. However, in the URP group, percent increase in ANP in response to volume loading was strikingly smaller (URP, 45+-18% versus SRP, 133+-25%; P lt .01) despite similar percent increase in mean right atrial pressure (URP, 100+-46% versus SRP, 86+-23%). The peak ANP level occurred significantly later in the URP group (69+-16 hours) than in the SRP group (28+-9 hours, P lt .001) after the onset of infarction. Conclusions The response of ANP release to volume loading is attenuated in patients with right ventricular infarction without coronary reperfusion. However, successful reperfusion induces a rapid recovery of %%%cardiac%%% endocrine function as well as its mechanical function. A sufficiently elevated plasma ANP level may be a useful predictor of hemodynamic improvement in patients with right ventricular infarction.

11099476 BIOSIS NO.: 199243068067
ISCHAEMIA-%%%REPERFUSION%%% STIMULATED ATRIAL NATRIURETIC %%%PEPTIDE%%% ANP RELEASE BY THE ISOLATED PERFUSED RAT %%%HEART%%%
AUTHOR: LOCHNER A (Reprint); GENADE S; MOUTON R
AUTHOR ADDRESS: DEP MED PHYSIOL, MRC CENT MOL AND CELL BIOL, MEDICAL FAC, UNIV STELLENBOSCH, TYGERBERG, REPUBLIC SOUTH AFRICA**SOUTH AFRICA
JOURNAL: Journal of Molecular and Cellular Cardiology 24 (SUPPL. 1): pS94 1992
CONFERENCE/MEETING: XIV WORLD CONGRESS OF THE INTERNATIONAL SOCIETY FOR HEART RESEARCH, KOBE, JAPAN, MAY 10-14, 1992. J MOL CELL CARDIOL.

ISSN: 0022-2828
DOCUMENT TYPE: Meeting
RECORD TYPE: Citation
LANGUAGE: ENGLISH

? t s5/7/1-2

5/7/1
DIALOG(R)File 5:Biosis Previews(R)

13971876 BIOSIS NO.: 199799605936
Human brain natriuretic peptide reduces blood pressure in normotensive and acute norepinephrine-induced hypertensive rabbits
AUTHOR: Clemens L Edward; Almirez Ramona G; Baudouin Karine A; Grossbard Elliott B; Protter Andrew A (Reprint)
AUTHOR ADDRESS: Scios Inc., 2450 Bayshore Parkway, Mountain View, CA 94043, USA**USA
JOURNAL: American Journal of Hypertension 10 (6): p654-661 1997 1997
ISSN: 0895-7061
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Human brain natriuretic peptide (hBNP) is a %%%cardiac%%%-%%%derived%%% %%%peptide%%% hormone with potent hemodynamic and renal effects in dogs, monkeys, and humans, but not in rats. At present there is no small animal model to study the actions of hBNP. These studies describe the effects of hBNP in New Zealand White rabbits in normotensive and acute norepinephrine-induced hypertensive states. Intravenous administration of hBNP (1, 3, 10, and 30 mu-g/kg) to anesthetized rabbits resulted in a dose-dependent diuresis and natriuresis and a decrease in systolic blood pressure. Bolus administration of hBNP resulted in a time- and dose-dependent accumulation of plasma cyclic GMP, consistent with activation of a particulate guanylyl cyclase receptor. The hemodynamic actions of hBNP suggest clinical utility for the management of acute hypertension associated with numerous surgical procedures, a condition linked to catecholamine activation. In rabbits with norepinephrine-induced acute hypertension, bolus and continuous infusion of hBNP markedly reduced blood pressure. These studies demonstrate that the rabbit is a useful species to study the hemodynamic and renal effects of hBNP and that this peptide may have therapeutic utility for the acute reduction of hypertension associated with catecholamine activation.

5/7/2
DIALOG(R)File 5:Biosis Previews(R)

13401219 BIOSIS NO.: 199699035279
Relaxant effect of human brain natriuretic peptide on human artery and vein tissue
AUTHOR: Protter Andrew A (Reprint); Wallace Annette M; Ferraris Victor A; Weishaar Ronald E
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JOURNAL: American Journal of Hypertension 9 (5): p432-436 1996 1996
ISSN: 0895-7061
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Brain natriuretic peptide (BNP) is a %%%cardiac%%%-%%%derived%%% %%%peptide%%% hormone with cardiovascular and renal actions that is structurally and functionally related to atrial natriuretic peptide (ANP). Previous studies using rat vascular tissue have demonstrated a direct vasorelaxant effect of BNP. However, species-specific potency issues have precluded an accurate measurement of the effect of human BNP. This report demonstrates the vasorelaxant effects of human BNP on human vascular tissue prepared from internal mammary artery and saphenous vein samples. The vasorelaxant effect of human BNP is compared to the other members of the natriuretic peptide family, human ANP and C-type natriuretic peptide (CNP). With regard to potency and magnitude of effect, human BNP and human ANP were similar in relaxing arterial tissue preconstricted with endothelin-1 (BNP ED-50 = 1.9 nmol/L and ANP ED-50 = 1.8 nmol/L) or phenylephrine (BNP ED-50 = 10 nmol/L and ANP ED-50 = 19 nmol/L), while CNP was significantly less effective. All three natriuretic peptides exhibited weak venodilating action. These data demonstrate that human BNP is a potent inhibitor of the vasoconstrictive actions of endothelin-1 and the a-adrenergic agonist phenylephrine on isolated human artery tissue preparations.

? t s7/7/1-7

7/7/1
DIALOG(R)File 5:Biosis Previews(R)

18889322 BIOSIS NO.: 200600234717
Apelin: A new plasma marker of cardiopulmonary disease
AUTHOR: Goetze Jens Peter (Reprint); Rehfeld Jens F; Carlsen Jom; Videbaek Regitze; Andersen Claus B; Boesgaard Soeren; Friis-Hansen Lennart
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JOURNAL: Regulatory Peptides 133 (1-3): p134-138 JAN 15 2006 2006
ISSN: 0167-0115
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Objectives: Dyspnea is a major symptom of both parenchymal lung disease and chronic heart failure. Underlying cardiac dysfunction can be assessed by measurement of %%%cardiac%%%-%%%derived%%% B-type natriuretic %%%peptide%%% or its precursor in plasma. However, no specific endocrine marker of the lung parenchyma has so far been identified. We therefore examined whether plasma concentrations of apelin, a novel inotropic hormone, is affected in patients with chronic parenchymal lung disease without cardiac dysfunction.Methods and results: Patients with severe chronic parenchymal lung disease and normal cardiac function (n = 53), idiopathic pulmonary hypertension with increased right ventricular pressure (n = 10), and patients with severe left ventricular systolic

dysfunction (n = 22) were enrolled. Plasma apelin-36 and proBNP concentrations were measured with radioimmunoassays. While proBNP plasma concentrations were unaffected in chronic parenchymal lung disease patients compared to normal subjects, the apelin-36 concentration was reduced 3.3-fold (median 35 pmol/l (0162 pmol/l) vs. 117 pmol/l (55-232 pmol/l), P < 0.001). Moreover, the apelin-36 concentration was decreased in chronic heart failure patients (2.1-fold, P < 0.01) and in patients with idiopathic pulmonary hypertension (4.0-fold, P < 0.001). In contrast, the proBNP concentration was highly increased in both chronic heart failure and idiopathic pulmonary hypertension patients.Conclusion: Plasma concentrations of apelin-36, a novel inotropic peptide, are decreased in patients with chronic parenchymal lung disease and preserved cardiac function. Combined measurement of apelin-36 and proBNP may be a new diagnostic approach in distinguishing pulmonary from cardiovascular causes of dyspnea.

7/7/2
DIALOG(R)File 5:Biosis Previews(R)

18819363 BIOSIS NO.: 200600164758
BNP and N-terminal proBNP are both extracted in the normal kidney
AUTHOR: Goetze J P (Reprint); Jensen G; Mller S; Bendtsen F; Rehfeld J F; Henriksen J H
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JOURNAL: European Journal of Clinical Investigation 36 (1): p8-15 JAN 2006 2006
ISSN: 0014-2972
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background Increased plasma concentrations of %%%cardiac%%%-%%%derived%%% B-type natriuretic %%%peptide%%% (BNP) and N-terminal pro-B-type natriuretic peptide (proBNP) are both associated with left ventricular dysfunction. Information on the regional elimination of the peptides is, however, still scarce. We therefore examined the renal and peripheral extraction of N-terminal proBNP and BNP.Materials and methods The study comprised 18 patients with essential arterial hypertension, 51 with cirrhosis, and 18 control patients without kidney or liver disease. All patients underwent a haemodynamic investigation with catheterization of the femoral artery and femoral and renal veins. Blood sampling from the catheters allowed determination of the arteriovenous extraction ratio of N-terminal proBNP and BNP.Results Neither the peripheral N-terminal proBNP (13, 11, 19 pmol L-1, NS) nor the BNP plasma concentrations (4, 12, 9 pmol L-1, NS) differed between the patient groups. In addition, similar renal extractions were observed in the groups. The renal extraction of N-terminal proBNP (0.16) was not different from that of BNP (0.16). In contrast, the N-terminal proBNP extraction in the lower extremity was markedly lower compared with BNP (0.00 vs. 0.125, P = 0.007).Conclusions A comparable renal elimination of N-terminal proBNP and BNP is contrasted by a selective extraction of BNP in the lower extremity. Our results suggest a different elimination mechanism in the renal and peripheral circulation, which partly may explain the higher

N-terminal proBNP compared with BNP concentrations in normal plasma.

7/7/3
DIALOG(R)File 5:Biosis Previews(R)

18403513 BIOSIS NO.: 200510098013
Determinants of inducible brain natriuretic peptide promoter activity
AUTHOR: Ma Kenneth K; Banas Krystyna; de Bold Adolfo J (Reprint)
AUTHOR ADDRESS: Univ Ottawa, Inst Heart, Lab Cardiovasc Endocrinol, Dept Cellular and Mol Med,Fac Med, 40 Ruskin St, Ottawa, ON K1Y 4W7, Canada** Canada
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JOURNAL: Regulatory Peptides 128 (3): p169-176 JUN 30 05 2005
ISSN: 0167-0115
DOCUMENT TYPE: Article; Literature Review
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Atrial natriuretic factor (ANF) and brain natriuretic peptide (BNP) are polypeptide hormones belonging to the %%%cardiac%%%-%%%derived%%% mammalian natriuretic %%%peptide%%% system. These hormones share the same biological properties and receptors and both play important roles in the maintenance of fluid and electrolyte balance and in cardiovascular growth. Most hemodynamic and neurohumoral stimuli can coordinately increase ANF and BNP gene expression. However, instances of discoordinated ANF and BNP gene expression have been described, providing an opportunity for investigating the mechanisms that differentially regulate the expression of the natriuretic peptide genes. For example, exposure of cardiocytes in culture to certain pro-inflammatory cytokines and conditioned medium from mixed lymphocyte cultures upregulate BNP but not ANF gene expression. BNP promoter activity is also upregulated under these conditions but the cis-acting elements involved in this phenomenon are not known. In comparison to the ANF gene, less is known about BNP promoter consensus elements that regulate gene expression by mechanical or neurohumoral agonists. A number of cis-acting elements for GATA, Nkx2.5, NF-kappa B and TEF transcription factors have recently been identified within the BNP promoter that regulate BNP expression in response to specific agonists. This review focuses on the information available regarding cis-acting determinants responsible for inducible BNP transcription. (c) 2004 Published by Elsevier B.V.

7/7/4
DIALOG(R)File 5:Biosis Previews(R)

17855358 BIOSIS NO.: 200400225413
The natriuretic peptides: An introduction.
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JOURNAL: Basic Research in Cardiology 99 (2): p71-75 March 2004 2004
MEDIUM: print
ISSN: 0300-8428

DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The natriuretic peptides are a family of widely distributed, but evolutionarily conserved, polypeptide mediators that exert a range of actions throughout the body. In cardiovascular homeostasis, the endocrine roles of the %%%cardiac%%%-%%%derived%%% atrial and B-type natriuretic %%%peptide%%% (ANP and BNP) in regulating central fluid volume and blood pressure have been recognised for two decades. However, there is a growing realisation that natriuretic peptide actions go far beyond their volume-regulating effects. These pleiotropic actions include local (autocrine/paracrine) regulatory actions of ANP and BNP within the heart, and of another natriuretic peptide, CNP, within the vessel wall. Effects on function and growth of the local tissue environment are likely to be of great importance, especially in disease states where tissue and circulating levels of ANP and BNP rise markedly. At present, the relevance of other natriuretic peptides (notably uroguanylin and DNP) to human physiology and pathology remain uncertain other articles in this issue of Basic Research in Cardiology review the molecular physiology of natriuretic peptide signalling, with a particular emphasis on the lessons from genetically targetted mice; the vascular activity of natriuretic peptides; the regulation and roles of natriuretic peptides in ischaemic myocardium; and the diagnostic, prognostic and therapeutic roles of natriuretic peptides in heart failure.

7/7/5
DIALOG(R)File 5:Biosis Previews(R)

16776971 BIOSIS NO.: 200200370482
A Th1 peptide conjugate decreases disease severity in the A/J mouse model of autoimmune myocarditis
AUTHOR: Wang Yan (Reprint); Talor Eyal; Zimmmerman Daniel; Rose Noel
AUTHOR ADDRESS: Pathology, Johns Hopkins University, 720 Rutland Avenue, Baltimore, MD, 21205, USA**USA
JOURNAL: FASEB Journal 16 (5): pA1044 March 22, 2002 2002
MEDIUM: print
CONFERENCE/MEETING: Annual Meeting of Professional Research Scientists on Experimental Biology New Orleans, Louisiana, USA April 20-24, 2002; 20020420
ISSN: 0892-6638
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: In A/J mice Experimental Autoimmune Myocarditis (EAM) induced by murine %%%cardiac%%% myosin or a %%%derived%%% 19-mer %%%peptide%%%, My-1, has a Th2 phenotype. A L.E.A.P.S.TM (Ligand Epitope Antigen Presentation System) Th1 conjugate of My-1, J-My-1, induced EAM in 33% (3/9) immunized mice, average disease severity score (ADSS) of 0.6, compared to My-1, which induced EAM in 100% (8/8; ADSS=2.8). Using mice immunized with the J-My-1, antigen stimulated splenocyte production of cytokines tended to be higher for IFN-g, IL-5, 10 and TNF-a compared to My-1 immunized mice. In a followup experiment, 11/20 A/J mice (55%) developed EAM (ADSS=0.78) that received both J-My-1 (D -14 and -7) and

My-1 (D 0 and 7), compared to 15/19 (79%) control mice (ADSS=2) which received only My-1 (D 0 and 7) (p=0.01). J-My-1 immunization demonstrated a trend toward increased numbers of CD3+ splenocytes producing IFN-g, IL-2, 5, 10 and TNF-a, plus it markedly elevated the number of Caspase-3+ cells. In summary, the J-My-1 peptide conjugate lessens substantially the severity of EAM induced by My-1 peptide. Similar peptide constructs may have utility as treatment for autoimmune myocarditis in man.

7/7/6

13319565 BIOSIS NO.: 199698787398
Thrombin receptor actions in neonatal rat ventricular myocytes
AUTHOR: Jiang Tianrong; Kuznetsov Valery; Pak Elena; Zhang Honglu; Robinson Richard B; Steinberg Susan F (Reprint)
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JOURNAL: Circulation Research 78 (4): p553-563 1996 1996
ISSN: 0009-7330
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Previous studies established that thrombin stimulates phosphoinositide hydrolysis and modulates contractile function in neonatal rat ventricular myocytes. The present study further defines the signaling pathways activated by the thrombin receptor and their role in thrombin's actions in %%%cardiac%%% myocytes. The thrombin receptor-%%%derived%%% agonist %%%peptide%%% (TRAP, a portion of the tethered ligand created by thrombin's proteolytic activity) stimulates the rapid and transient accumulation of inositol his- and tris-phosphates (IP-2 and IP-3, respectively), which is followed by the more gradual and sustained accumulation of inositol monophosphate (IP-1). TRAP elicits a larger and more sustained accumulation of IP-1 than does thrombin. Thrombin and TRAP also activate mitogen-activated protein kinase (MAPK) in cultured neonatal rat ventricular myocytes. Differences in the kinetics and magnitude of thrombin- and TRAP-dependent inositol phosphate (IP) accumulation are paralleled by differences in the kinetics and magnitude of thrombin- and TRAP-dependent activation of MAPK. Pretreatment with phorbol 12-myristate 13-acetate (PMA) to downregulate protein kinase C (PKC) attenuates thrombin- and TRAP-dependent activation of MAPK, although small and equivalent effects of thrombin and TRAP to stimulate MAPK persist in PMA-pretreated cells. These results support the notion that the thrombin receptor activates MAPK through PKC-dependent and PKC-independent pathways and that the incremental activation of MAPK by TRAP over that induced by thrombin is the consequence of enhanced activation through the PKC limb of the phosphoinositide lipid pathway. TRAP also increases the beating rate of spontaneously contracting ventricular myocytes and elevates cytosolic calcium in myocytes electrically driven at a constant basic cycle length. The effects of TRAP to modulate contractile function and elevate intracellular calcium are not inhibited by tricyclodecan-9-yl-xanthogenate (D609, to block TRAP-dependent IP accumulation) or pretreatment with PMA (to downregulate PKC). The TRAP-dependent rise in intracellular calcium also is not inhibited by verapamil or removal of extracellular calcium but is

markedly attenuated by depletion of sarcoplasmic reticular calcium stores by caffeine. Patch-clamp experiments demonstrate that TRAP elevates intracellular calcium in cells held at a membrane potential of -70 mV. Taken together, these results support the conclusion that the thrombin receptor modulates contractile function by mobilizing intracellular calcium through an IP-3-independent mechanism and that this response does not require activation of voltage-gated ion channels.

7/7/7
DIALOG(R)File 5:Biosis Previews(R)

09354912 BIOSIS NO.: 198936063803
%%%CARDIAC%%% EFFECTS OF ENDOTHELIN AN ENDOTHELIUM-%%%DERIVED%%% VASOCONSTRICTOR %%%PEPTIDE%%%
AUTHOR: ISHIKAWA T (Reprint); GOTO K; YANAGISAWA M; KURIHARA H; MASAKI T
AUTHOR ADDRESS: DEP PHARMACOL, INST BASIC MED SCI, UNIV TSUKUBA**JAPAN
JOURNAL: Japanese Circulation Journal 52 (8): p732 1988
CONFERENCE/MEETING: 52ND ANNUAL SCIENTIFIC MEETING OF THE JAPANESE CIRCULATION SOCIETY, AKITA, JAPAN, MAY 1988. JPN CIRC J.
ISSN: 0047-1828
DOCUMENT TYPE: Meeting
RECORD TYPE: Citation
LANGUAGE: ENGLISH

? t s10/7/1-18

10/7/1
DIALOG(R)File 5:Biosis Previews(R)

18761150 BIOSIS NO.: 200600106545
Nebulized N-acetyl cysteine protects the pulmonary graft inside the non-%%%heart%%%-beating donor
AUTHOR: Rega Filip R; Wuyts Wim A; Vanaudenaerde Bart M; Jannis Nicole C; Neyrinck Arne P; Verleden Geert M; Lerut Toni E; Van Raemdonck Dirk E M (Reprint)
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JOURNAL: Journal of Heart and Lung Transplantation 24 (9): p1369-1377 SEP 2005 2005
ISSN: 1053-2498
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background: The use of lungs from non-%%%heart%%%-beating donors (NHBD) might significantly alleviate the organ shortage. The tolerable warm ischemic period after %%%cardiac%%% arrest, however, is limited to approximately I hour. If the lung could be safely protected inside the cadaver, this time period may be prolonged. This would help to obtain family consent and to organize organ retrieval.Methods: Pigs (30.8 +/- 0.6 kg) were killed, left untouched for 3 hours,,and divided into 3 groups. Nebulized N-acetyl cysteine (NAC) (300 mg), a precursor of the

antioxidant agent glutathione, was administered during 10 minutes before death in Group I (NAC-NHBD, n = 6) and 15 minutes after death in Group 11 (NHBD-NAC, n = 6). In the control group, no aerosol was administered (NHBD, n = 6). After a warm ischemic interval of 3 hours, both lungs in all groups were topically cooled for I hour. Thereafter, the left lung was prepared for evaluation in an isolated %%%reperfusion%%% circuit. Hemodynamic, aerodynamic, and oxygenation parameters were measured. Wet-to-dry weight ratio (W/%%%D%%%) was calculated after %%%reperfusion%%%. The right lung was used to measure reduced glutathione (GSH) and oxidized glutathione (GSSG) levels (mu mol/g) in lung %%%homogenates%%% and total protein levels in bronchial lavage fluid.Results: Pulmonary vascular resistance, mean airway pressure, and W/%%%D%%% were significantly decreased in NAC-NHBD (1930 +/- 144 Dynes (.) see (.) cm(-5), 14.2 +/- 0.5 cm H2O, and 7.4 +/- 0.4; p < 0.01, 0.01, and 0.05, respectively) and NHBD-NAC (1837 +/- 180 Dynes (.) sec (.) cm(-5), 13.3 +/- 1.2 cm H2O, and 7.3 +/- 0.3; p < 0.0 1, 0.05, and 0.05; respectively) when compared with the control group (5051 +/- 530 Dynes (.) sec (.) cm(-5), 17 +/- 0.4 cm H2O, 8.5 +/- 0.1, respectively). GSH/GSSG ratio was significantly higher and protein levels were significantly lower in NAC-NHBD (1.7 +/- 0.1 and 1315 +/- 60 mu g/ml; p < 0.05 and 0.05, respectively) and NHBD-NAC (1.7 +/- 0.2 and 1475 +/- 159 mu g/ml;p < 0.05 and 0.05, respectively) when compared with the control group (1.2 0.1 and 2150 200 mu g/ml).Conclusions: Nebulized NAC administered before or shortly after death attenuates early ischemia %%%reperfusion%%% injury via upregulation of glutathione. NAC might be a promising tool to protect the pulmonary graft from both controlled and uncontrolled NHBD.

10/7/2
DIALOG(R)File 5:Biosis Previews(R)

18622032 BIOSIS NO.: 200510316532
Degradation of myosin light chain 1 in isolated rat hearts subjected to ischemia-%%%reperfusion%%% injury: A new intracellular target for matrix metalloproteinase-2
AUTHOR: Sawicki Grzegorz (Reprint); Leon Hernando; Sawicka Jolanta; Sariahmetoglu Meltem; Szczesna-Cordary Danuta; Schulz Richard
AUTHOR ADDRESS: Univ Alberta, Edmonton, AB, Canada**Canada
JOURNAL: Circulation 110 (17, Suppl. S): p636-637 OCT 26 2004 2004
CONFERENCE/MEETING: 77th Scientific Meeting of the American-Heart-Association New Orleans, LA, USA November 07 -10, 2004; 20041107
SPONSOR: Amer Heart Assoc
ISSN: 0009-7322
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Matrix metalloprotemase-2 (MMP-2) contributes to %%%cardiac%%% dysfunction resulting from ischemia-%%%reperfusion%%% (I/R) injury. MMP-2 not only remodels the extracellular Matrix but also acts intracellularly by degrading troponin-I. Methods: We used a proteomics approach to search for other possible targets of MMP-2 in the %%%heart%%%. Isolated rat hearts were subjected to 20 min ischemia and 30 min %%%reperfusion%%%. Results: The impaired recovery of mechanical function of the %%%heart%%%

was attenuated by MMP inhibitors o-phenanthroline or doxycycline. Quantitative 2-%%%D%%% electrophoresis of %%%homogenates%%% from aerobically perfused hearts (control) or those subjected to I/R injury (in the presence or absence of MMP inhibitors) showed two low molecular weight proteins whose levels significantly increased upon I/R injury and were normalized to control levels by MMP inhibitors. Mass spectrometry analysis identified both proteins as fragments of myosin light chain 1. MLC1 shows cleavage recognition sequences for MMP-2 and is rapidly degraded by it in vitro. Immunoprecipitation of %%%heart%%% %%%homogenates%%% from ischemic-reperfused hearts using anti-MMP-2 showed that MLC1 is co-localized with MMP-2. Conclusion: Our results demonstrate the usefulness of a combined pharmacological and functional proteomics approach in identifying possible new targets for MMP-2 and reveal that degradation of MLC1 may contribute to contractile dysfunction of the %%%heart%%%.

10/7/3
DIALOG(R)File 5:Biosis Previews(R)

18211665 BIOSIS NO.: 200500117843
Contrasting effects of ischemia on the kinetics of membrane voltage and intracellular calcium transient underlie electrical alternans
AUTHOR: Lakireddy Vikram; Baweja Paramdeep; Syed Asma; Bub Gil; Boutjdir Mohamed; El-Sherif Nabil (Reprint)
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JOURNAL: American Journal of Physiology - Heart and Circulatory Physiology 288 (1): pH400-H407 January 2005 2005
MEDIUM: print
ISSN: 0363-6135 _(ISSN print)
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Repolarization alternans has been considered a strong marker of electrical instability. The objective of this study was to investigate the hypothesis that ischemia-induced contrasting effects on the kinetics of membrane voltage and intracellular calcium transient (CaiT) can explain the vulnerability of the ischemic %%%heart%%% to repolarization alternans. Ischemia-induced changes in action potential (AP) and CaiT resulting in alternans were investigated in perfused Langendorff guinea pig hearts subjected to 10-15 min of global no-flow ischemia followed by 10-15 min of %%%reperfusion%%%. The %%%heart%%% was stained with 100 mul of rhod-2 AM and 25 mul of RH-237, and AP and CaiT were simultaneously recorded with an optical mapping system of two 16 X 16 photodiode arrays. Ischemia was associated with shortening of AP duration (%%%D%%%) but delayed upstroke, broadening of peak, and slowed decay of CaiT resulting in a significant increase of CaiT-%%%D%%%. The changes in APD were spatially heterogeneous in contrast to a more spatially %%%homogeneous%%% lengthening of CaiT-%%%D%%%. CaiT alternans could be consistently induced with the introduction of a shorter cycle when the upstroke of the AP occurred before complete relaxation of the previous CaiT and generated a reduced CaiT. However, alternans of CaiT was not necessarily associated with alternans of APD, and this was correlated with the degree of

spatially heterogeneous shortening of APD. Sites with less shortening of APD developed alternans of both CaiT and APD, whereas sites with greater shortening of APD could develop a similar degree of CaiT alternans but slight or no APD alternans. This resulted in significant spatial dispersion of APD. The study shows that the contrasting effects of ischemia on the duration of AP and CaiT and, in particular, on their spatial distribution explain the vulnerability of ischemic %%%heart%%% to alternans and the increased dispersion of repolarization during alternans.

10/7/4
DIALOG(R)File 5:Biosis Previews(R)

17469270 BIOSIS NO.: 200300424114
Effect of intermittent and continuous hypoxia on ryanodine receptors of rat %%%heart%%%.
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JOURNAL: Life Sciences 73 (17): p2151-2160 September 12, 2003 2003
MEDIUM: print
ISSN: 0024-3205 _(ISSN print)
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Intermittent hypoxia (IH) adaptation has been shown to exert beneficial effects on the functions of hearts that had been subjected to insult by ischemia or ischemia/%%%reperfusion%%%. To understand whether calcium release channels/ryanodine receptors (RyRs) were involved, the effects of IH and continuous hypoxia (CH) on (3H)ryanodine binding to %%%homogenates%%% of rat hearts were investigated. Similar studies were performed on rat skeletal muscle. The main results on %%%cardiac%%% muscle were as follows: 1) Ischemia for up to 45 min in normal rat hearts had no obvious effect on the equilibrium ryanodine binding constant (%%%Kd%%%), while the maximum number of ryanodine binding sites (Bmax) was affected in a time-dependent manner. Bmax was significantly increased with 15 min ischemia, which then returned to control levels upon prolonging the ischemia to 30 min. After 45 min ischemia, a small decrease of Bmax was observed. 2) IH adaptation for up to 28 days did not change Bmax, but a significant decrease of Bmax was apparent after longer IH adaptation or after CH exposure. Although Bmax was not altered by 30 min ischemia, 30 min %%%reperfusion%%% following 30 min ischemia induced an evident decrease of Bmax. After either IH or CH adaptation, the ischemia/%%%reperfusion%%%- induced decrease of Bmax was abolished. 3) Several effects on %%%Kd%%% of ischemia and ischemia/%%%reperfusion%%%, with and without IH or CH adaptation, were observed. The most distinct and consistent finding was that a clear increase of %%%Kd%%% was induced by ischemia or ischemia/%%%reperfusion%%% in CH adapted rats. (3H)Ryanodine binding to %%%homogenates%%% of rat skeletal muscle was also affected by IH and CH adaptation. In contrast to that found in %%%cardiac%%% muscle, a decrease of Bmax in skeletal muscle appeared only

after CH adaptation. The physiological significance of these effects is discussed.

10/7/5
DIALOG(R)File 5:Biosis Previews(R)

16780894 BIOSIS NO.: 200200374405
Radical scavenging properties of novel benzopyran derivatives, TA248 and TA276, and effects of the compounds on ischemic/reperfused %%%myocardium%%% in dogs
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JOURNAL: Journal of Pharmaceutical Sciences 89 (9): p1114-1122 September, 2000 2000
MEDIUM: print
ISSN: 0022-3549
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Characteristics of novel benzopyran derivatives, TA248 and TA276, and their effects on %%%myocardial%%% contraction in ischemic/reperfused hearts in dogs were examined. TA248 and TA276 inhibited NADPH-dependent lipid peroxidation induced by Fe3+ in the rat brain %%%homogenate%%%. Both compounds reduced cntdotO2- produced by xanthine-xanthine oxidase system in a dose-dependent manner. TA276 scavenged cntdotOH generated by Fenton reaction in a dose-dependent manner. TA248 also inhibited the cntdotOH production, but the effect was neither complete nor dose dependent. %%%Myocardial%%% contraction was assessed as segment shortening of the left ventricular wall in pentobarbital-anesthetized open-chest dogs. The segment shortening was decreased by the left anterior descending coronary artery ligation (ischemia) and returned by release of the ligated artery (%%%reperfusion%%%). The segment shortening did not recover fully during %%%reperfusion%%%. Either TA248 or TA276 injected 10 min before ischemia improved the recovery of %%%myocardial%%% contraction during %%%reperfusion%%%. Both compounds preserved the level of ATP in the 60-min reperfused %%%myocardium%%%. However, the level of lipid peroxides was not changed by TA248 and TA276. TA248 and TA276 may protect %%%myocardium%%% against ischemic/%%%reperfusion%%% insult, partly because of their free radical scavenging activity, but no significant change in %%%myocardial%%% lipid peroxide level was observed.

10/7/6
DIALOG(R)File 5:Biosis Previews(R)

16070619 BIOSIS NO.: 200100242458
A3 adenosine receptor stimulation modulates sarcoplasmic reticulum Ca2+ release in rat %%%heart%%%
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JOURNAL: Cardiovascular Research 50 (1): p56-64 April, 2001 2001
MEDIUM: print
ISSN: 0008-6363
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Objective: Stimulation of A3 adenosine receptors has been shown to protect %%%cardiac%%% myocytes from ischemic injury, but the mechanism of this action is unknown. We evaluated the effect of adenosine agonists and antagonists on the sarcoplasmic reticulum (SR) Ca2+ channels. Methods: Isolated rat hearts were perfused with control buffer or different adenosine agonists and antagonists. Hearts were then %%%homogenized%%% and used to determine SR Ca2+-induced Ca2+ release, assayed by quick filtration technique after loading with 45Ca2+, and the binding of (3H)ryanodine, a specific ligand of the SR Ca2+ release channel. In parallel experiments, hearts were challenged with 30 min of global ischemia and 120 min of %%%reperfusion%%%, and the extent of tissue necrosis was evaluated by triphenyltetrazolium chloride staining. Results: Perfusion with the A1>A3 agonist R-PIA and the A3>A1 agonist IB-MECA was associated with reduced (3H)ryanodine binding, due to reduced Bmax (by about 20%), whereas %%%Kd%%% and Ca2+-dependence of the binding reaction were unaffected. These actions were abolished by the A3 antagonist MRS 1191, while they were not affected by A1 and A2 antagonists. The rate constant of SR Ca2+ release decreased by 25-30% in hearts perfused with R-PIA or IB-MECA. Tissue necrosis was significantly reduced in the presence of R-PIA or IB-MECA. Protection was removed by MRS 1191, and it was not affected by A1 and A2 antagonists. Hearts were also protected by administration of dantrolene, a ryanodine receptor antagonist. In the presence of dantrolene, no further protection was provided by IB-MECA. Conclusion: A3 adenosine receptor stimulation modulates the SR Ca2+ channel. This action might account for the protective effect of adenosine.

10/7/7
DIALOG(R)File 5:Biosis Previews(R)

15079529 BIOSIS NO.: 199900339189
Assessing the impact of cerebral injury after %%%cardiac%%% surgery: Will determining the mechanism reduce this injury?
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JOURNAL: Annals of Thoracic Surgery 67 (6): p1871-1873 June, 1999 1999
MEDIUM: print
ISSN: 0003-4975
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background. Central nervous system dysfunction continues to

produce significant morbidity and associated mortality in patients undergoing %%%cardiac%%% surgery. Using a closed-chest canine cardiopulmonary bypass model, dogs underwent 2 h of hypothermic circulatory arrest (HCA) at 18degreeC, followed by resuscitation and recovery for 3 days. Animals were assessed functionally by a species-specific behavioral scale, histologically for patterns of selective neuronal necrosis, biochemically by analysis of microdialysis effluent, and by receptor autoradiography for N-methyl-%%%D%%%-aspartate (NMDA) glutamate receptor subtype expression. Results. Using a selective NMDA (glutamate) receptor antagonist (MK801) and an AMPA antagonist (NBQX), glutamate excitotoxicity in the development of HCA-induced brain injury was documented and validated. A microdialysis technique was employed to evaluate the role of nitric oxide (NO) in neuronal cell death. Arginine plus oxygen is converted to NO plus citrulline (CIT) by the action of NO synthase (nNOS). CIT recovery in the cerebrospinal fluid and from canine cortical %%%homogenates%%% increased during HCA and %%%reperfusion%%%. These studies demonstrated that neurotoxicity after HCA involves a significant and early induction of nNOS expression, and neuronal processes leading to widespread augmentation of NO production in the brain. To further investigate the production of excitatory amino acids in the brain, we hypothesized the following scenario: HCAfwdarw uparw glutamate, uparw aspartate, uparw glycinefwdarw uparw intracellular Ca2+fwdarw uparw NO + CIT. Using the same animal preparation, we demonstrated that HCA caused increased intracerebral glutamate and aspartate that persists up to 20 h post-HCA. HCA also resulted in CIT (NO) production, causing a continued and delayed neurologic injury. Confirmatory evidence of the role of NO was demonstrated by a further experiment using a specific nNOS inhibitor, 7-nitroindazole. Animals underwent 2 h of HCA, and then were evaluated both physiologically and for NO production. 7-Nitroindazole reduced CIT (NO) production by 58.4 +- 28.3%. In addition, dogs treated with this drug had superior neurologic function compared with untreated HCA controls. Conclusions. These experiments have documented the role of glutamate excitotoxicity in neurologic injury and have implicated NO as a significant neurotoxin causing necrosis and apoptosis. Continued research into the pathophysiologic mechanisms involved in cerebral injury will eventually yield a safe and reliable neuroprotectant strategy. Specific interventional agents will include glutamate receptor antagonists and specific neuronal NO synthase inhibitors.

10/7/8
DIALOG(R)File 5:Biosis Previews(R)

14413015 BIOSIS NO.: 199800207262
Identification of nucleoside transport binding sites in the human %%%myocardium%%%
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JOURNAL: Molecular and Cellular Biochemistry 180 (1-2): p105-110 March, 1998 1998
MEDIUM: print
ISSN: 0300-8177
DOCUMENT TYPE: Article
RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: The role of nucleoside transport in ischemia-%%%reperfusion%%% injury and arrhythmias has been well documented in various animal models using selective blockers. However, clinical application of nucleoside transport inhibitors remains to be demonstrated in humans. It is not known whether human %%%heart%%% has nucleoside transport similar to that of animals. The aim of this study is to pharmacologically identify the presence of nucleoside transport binding sites in the human %%%myocardium%%% compared to animals. %%%Myocardial%%% tissue was obtained from guinea pig left and right ventricle, canine left ventricle, human intraoperative right atrium and human cadaveric right atrium and right and left ventricles. %%%Myocardial%%% preparations were obtained from tissue samples after %%%homogenized%%% and a differential centrifugation. Equilibrium binding assays were performed using (3H)-p-nitrobenzylthioinosine (NBMPR) at room temperature in the presence or absence of non-radioactive NBMPR or other nucleoside transport blockers such as p-nitrobenzylthioguanosine dipyridamole, lidoflazine, papaverin, adenosine and doxorubcine. From saturation curves and inhibition kinetics, we determined the relative maximal binding (Bmax) and dissociation constant (%%%Kd%%%) of (3H)-NBMPR binding of human %%%myocardial%%% preparations. Results demonstrated that the fresh human %%%myocardial%%% preparations have a specific binding site for NBMPR with a Bmax of 283 +- 32 fmol/mg protein and %%%Kd%%% of 0.56 +- 0.12 nM. These values are lower than those obtained from guinea pigs (Bmax = 1440 +- 187 fmol/mg protein and %%%Kd%%% = 0.21 +- 0.03 nM) and canine atrium (Bmax 594 +- 73 fmol/mg protein, and %%%Kd%%% = 1.12 +- 0.22 nM). Displacement kinetics studies revealed the relative potencies (of certain unrelated drugs as follow: p-nitrobenzylthioguanosine > dipyridamole > lidoflazine > pavaverine > Diltazam > adenosine > doxyrubicin. It is concluded that human %%%myocardium%%% contains an active nucleoside transport site which may play a crucial role in post-ischemic %%%reperfusion%%%-mediated injury in a wide spectrum of ischemic syndromes.

10/7/9
DIALOG(R)File 5:Biosis Previews(R)

14337243 BIOSIS NO.: 199800131490
Thiols protect the inhibition of %%%myocardial%%% aconitase by peroxynitrite
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JOURNAL: Archives of Biochemistry and Biophysics 350 (1): p104-108 Feb. 1, 1998 1998
MEDIUM: print
ISSN: 0003-9861
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Peroxynitrite (ONOO-) is a potent inhibitor of %%%myocardial%%% aconitase. Because ONOO- reacts with sulfhydryl moieties, we investigated

whether thiols protect against ONOO-mediated inhibition of aconitase. Aconitase activity was examined in ventricular %%%homogenates%%% prepared from freshly isolated rat hearts. Peroxynitrite, but not the nitric oxide donor 8-nitroso-N-acetyl-%%%d%%%,l-penicillamine (0.03-300 muM), inhibited aconitase activity (IC50 = 47 +- 6 muM). L-Cysteine (0.03-3 mM), glutathione (0.03-3 mM), and N-(2-mercaptoproprionyl)-glycine (MPG, 0.1-3 mM) protected against the inhibitory effect of ONOO- (100 muM) with the rank order of potency of MPG > glutathione > L-cysteine. %%%D%%% -Cysteine (3 mM) had a protective effect similar to L-cysteine, but L-cystine, the oxidized form of L-cysteine, offered no protection. Ferrous ammonium sulfate (1 mM) markedly enhanced the protection provided by L-cysteine, but not by glutathione or MPG. Thiols protect %%%myocardial%%% aconitase against inhibition by ONOO- in a manner which is sulfhydryl group dependent and not stereospecific. The protection is related to the maintenance of the redox state of the iron-sulfur cubane cluster and cysteine residues at the active site of the enzyme. Both naturally occurring thiols and thiol-based drugs may be useful to protect the %%%heart%%% during ischemia-%%%reperfusion%%% injury where there is an excessive production of ONOO-.

14162554 BIOSIS NO.: 199799796614
Cardioadaptation induced by cyclic ischemic preconditioning is mediated by translational regulation of de novo protein synthesis
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JOURNAL: Journal of Surgical Research 71 (2): p155-160 1997 1997
ISSN: 0022-4804
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Repetitive episodes of brief ischemia induce %%%myocardial%%% adaptation to prolonged ischemia. To investigate whether this %%%myocardial%%% adaptive response involves gene transcription and de novo protein synthesis, this study examined the effects of actinomycin %%%D%%% (ActD) and cycloheximide (Chx) on the cardioprotection induced by repeated ischemic preconditioning. Isolated, perfused working rat hearts underwent cyclic ischemia (CI, four 5-min ischemic intervals, 37 degree C) with and without pretreatment with Chx (1.0 mg/kg, ip; translation inhibition) or ActD (1.5 mg/kg, ip; transcription inhibition) 3 hr prior to %%%heart%%% isolation. All hearts were subjected to 20 min global ischemia (37 degree C) and 40 min %%%reperfusion%%% (I/R). Coronary effluent was assayed for creatine kinase (CK) activity. %%%Myocardial%%% tissue was %%%homogenized%%% and crude protein content determined. CI preconditioning improved postischemic recovery of %%%cardiac%%% output (CO; 48 +- 5.1% vs 73 +- 2.8% for control and CI, respectively, P lt 0.05) and reduced CK release (61 +- 8.5 U/L vs 38 +- 4.2 U/L for control and CIl, respectively, P lt 0.05). The beneficial effects of CI preconditioning on %%%myocardial%%% function and cellular integrity were abolished by Chx while ActD had no effect. %%%Myocardial%%% protein

content was increased in CI preconditioned %%%myocardium%%% relative to control hearts (5082 +- 89 mu-g/g vs. 4459 +- 260 mu-g/g, respectively, P lt 0.05). Similarly, pretreatment with Chx but not ActD prevented the increase in %%%myocardial%%% protein content (Chx + CI, 4020 +- 254 mu-g/g, ActD + CI, 5049 +- 68 mu-g/g, P lt 0.05 Chx + CI vs CI or ActD + CI). %%%Myocardial%%% dry/wet weight ratios were not different between groups (P gt 0.05). We conclude that CI preconditioning induces protein synthesisdependent %%%myocardial%%% protection against I/R injuries. CI-induced de novo protein synthesis in the %%%myocardium%%% appears to be regulated at the translational level rather than by gene transcription.

10/7/11
DIALOG(R)File 5:Biosis Previews(R)

14100713 BIOSIS NO.: 199799734773
Phorbol ester, but not ischemic preconditioning, activates protein kinase %%%D%%% in the rat %%%heart%%%
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JOURNAL: Journal of Molecular and Cellular Cardiology 29 (8): p2273-2283 1997 1997
ISSN: 0022-2828
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The signal transduction pathways that mediate the cardioprotective effects of ischemic preconditioning remain unclear. Here we have determined the role of a novel kinase, protein kinase %%%D%%% (PKD). in mediating preconditioning in the rat %%%heart%%%. Isolated rat hearts (n = 6/group) were subjected to either: (i) 36 min aerobic perfusion (control); (ii) 20 min aerobic perfusion plus 3 min no-flow ischemia. 3 min %%%reperfusion%%%, 5 min no-flow ischemia, 5 min %%%reperfusion%%% (ischemic preconditioning); (iii) 20 min aerobic perfusion plus 200 nmol/l phorbol 12-myristate 13-acetate (PMA) given as a substitute for ischemic preconditioning. The left ventricle then was excised, %%%homogenized%%% and PKD immunoprecipitated from the %%%homogenate%%%. Activity of the purified kinase was determined following incubation with (gamma-32P)-ATP+-syntide-2, a substrate for PKD. Significant PKD autophosphorylation and syntide-2 phosphorylation occurred in PMA-treated hearts, but not in control or preconditioned hearts. Additional studies confirmed that recovery of LVDP was greater and initiation of ischemic contracture and time-to-peak contracture were less, in ischemic preconditioned hearts compared with controls (P lt 0.05). Our results suggest that the early events that mediate ischemic preconditioning in the rat %%%heart%%% occur via a PKD-independent mechanism.

10/7/12
DIALOG(R)File 5:Biosis Previews(R)

13697182 BIOSIS NO.: 199799331242
Changes of the anionic site at the surface of ischemic-reperfused %%%myocardial%%% cells in rat
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JOURNAL: Hunan Yike Daxue Xuebao 21 (4): p285-288 1996 1996
ISSN: 1000-5625
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Chinese

ABSTRACT: The purpose of this study was to acquire more understanding about the %%%myocardial%%% surface damage during ischemia-%%%reperfusion%%% (I/R) at the molecular level. In the I/R in vivo model of rats, alterations of the anionic site at the %%%myocardial%%% cell surface were assessed quantitatively with a PEI cationic probe. The influence of I and I/R on the anionic sites density (ASD) was observed. The relationship between the sialic acid content (SAC) and ASD was verified by using the biochemical method. Rats were divided into 4 groups (n = 5, per group), control (A), ischemia 30 min(B), ischemia 30 min %%%reperfusion%%% 30 min (C), ischemia 30 min %%%reperfusion%%% 60 min (%%%D%%%). Part of the %%%myocardial%%% tissues was put to PEI under electron microscopy. The other part was %%%homogenated%%% for biochemical determination of SAC. The results showed that ASD in Group A,B,C and %%%D%%% was 155.74+-3. 72,128. 32+-5.28,88.46+-2.88 and 69. 37+-2.48 (N/mu-m-2) respectively (B lt A, C and %%%D%%% lt B, %%%D%%% lt C, P lt 0.01). The decrease of ASD was paralleled to the degree of ultrastructural damage. SAC of group A, B, C and %%%D%%% was decreased progressively. As compared with A, the percentage contents of Groups B, C, %%%D%%% were reduced to 14%, 35%, 51%, respectively. There was correlation between SAC and ASD (r = 0. 9200, P lt 0.01). It indicates that decrease of anionic sites is a result of the surface damage of %%%myocardial%%% cells caused by I and I/R. The molecular basis for the decrease of anionic sites lies in reduced amounts of sialic acid.

10/7/13
DIALOG(R)File 5:Biosis Previews(R)

13222205 BIOSIS NO.: 199698690038
Organ distribution and molecular forms of human xanthine dehydrogenase/xanthine oxidase protein
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JOURNAL: Laboratory Investigation 74 (1): p48-56 1996 1996
ISSN: 0023-6837
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Xanthine dehydrogenase/xanthine oxidase (XDH/XO) is a major cytoplasmic source of superoxide radicals and hydrogen peroxide, and it is considered important in the pathogenesis of ischemia-%%%reperfusion%%%

damage. Because little is known about the enzyme in human tissues, the aims of this study were to purify human XDH/XO and to produce Ab for detection of the protein in Western blots and for quantification by ELISA. We purified human milk XDH/XO, produced Ab for Western blotting and ELISA of the protein, and evaluated the molecular forms and activity-protein relationships in human tissues. The molecular size of the purified protein under nondenaturing conditions was approximately 300 %%%kd%%%. On SDS-PAGE, it was fragmented into four main bands of 143, 125, 87, and 59 %%%kd%%%. Ab recognized bands of similar size in Western blots of the purified preparation and human milk. In fresh liver %%%homogenates%%% treated with anti-proteases, the three largest bands were observed; in the intestine, only the two largest were observed. Serum, brain, %%%heart%%%, and skeletal muscle were negative, whereas some lung and kidney samples showed one faint band of 143 %%%kd%%%. Trypsin treatment of the enzyme converted the large molecular-weight bands into smaller bands, as did incubation of a liver homagenate without anti-proteases. XDH/XO protein concentrations (ng/mg total protein) were 146 +- 70 in liver and 556 +- 320 in intestine and less than 5 ng/ml in serum. The relationship of activity to protein (2.7-3.0 mu-mol/min/mg XDH/XO protein) was constant in liver and intestine during development. We conclude that 1) human XDH/XO has molecular size and subunit structure similar to other mammalian enzymes; 2) the polypeptide chain is unstable, also in the intact cell, despite retained activity: and 3) the amount of inactive XDH/XO in human liver and intestine is apparently small.

13043735 BIOSIS NO.: 199598511568
Effect of ischemia and ischemia-%%%reperfusion%%% on ryanodine binding and Ca-2+ uptake of %%%cardiac%%% sarcoplasmic reticulum
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JOURNAL: Journal of Molecular and Cellular Cardiology 27 (9): p1965-1975 1995 1995
ISSN: 0022-2828
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The effect of 15 min of global, normothermic ischemia on 3H-ryanodine binding and the oxalate-supported Ca-2+ uptake of %%%cardiac%%% sarcoplasmic reticulum (SR) was investigated in parallel using ventricular %%%homogenates%%% of isolated perfused rat hearts. Ischemia increased the Ca-2+ efflux under the uptake assay conditions, as demonstrated by the greater stimulation of Ca-2+ uptake by high concentrations of ryanodine (+ RY) to close the SR Ca-2+ channel. This effect was partially reversed by %%%reperfusion%%%. Ischemia depressed Ca-2+ uptake rate -RY at free (Ca-2+) of 0.4 mu-M and above, while the depression + RY was significant only above 10 mu-M Ca-2+. We tested the hypothesis that inhibition of the Ca-ATPase alone, by adding thapsigargin or cyclopiazonic acid, could reproduce the effects of ischemia on the %%%homogenate%%% Ca-2+ uptake rate. Thapsigargin or cyclopiazonic acid proportionally depressed Ca-2+ uptake rate + RY and - RY and produced

distinctly different effects of ischemia. Ischemia did not change the B-max or K-%%%d%%% for equilibrium 3H-ryanodine binding, or the Hill coefficient or K-Ca for the (Ca-2+)-dependence of equilibrium 3H-ryanodine binding. The rate of ryanodine binding, measured under the uptake conditions, was increased by ischemia and further increased by %%%reperfusion%%%. The effect of ischemia on the rate and extent of equilibrium binding to the high-affinity ryanodine binding site were unrelated to the highly reproducible effects on SR Ca-2+ uptake rates measured in the %%%homogenate%%%.

10/7/15
DIALOG(R)File 5:Biosis Previews(R)

12887922 BIOSIS NO.: 199598355755
Postischemic changes in %%%cardiac%%% sarcoplasmic reticulum Ca-2+ channels: A possible mechanism of ischemic preconditioning
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JOURNAL: Circulation Research 76 (6): p1049-1056 1995 1995
ISSN: 0009-7330
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We investigated the modifications of %%%cardiac%%% ryanodine receptors/sarcoplasmic reticulum Ca-2+ release channels occurring in ischemic preconditioning. In an isolated rat %%%heart%%% model, the injury produced by 30 minutes of global ischemia was reduced by preexposure to three 3-minute periods of global ischemia (preconditioning ischemia). The protection was still present 120 minutes after preconditioning ischemia but disappeared after 240 minutes. Three 1-minute periods of global ischemia did not provide any protection. In the crude %%%homogenate%%% obtained from ventricular %%%myocardium%%%, the density of (3H)ryanodine binding sites averaged 372 +- 18 fmol/mg of protein in the control condition, decreased 5 minutes after preconditioning ischemia (290 +- 15 fmol/mg, P lt .01), was still significantly reduced after 120 minutes (298 +- 17 fmol/mg, P lt .05), and recovered after 240 minutes (341 +- 21 fmol/mg). Three 1-minute periods of ischemia did not produce any change in ryanodine binding. The K-%%%d%%% for ryanodine (1.5 +- 0.3 nmol/L) was unchanged in all cases. In parallel experiments, the crude %%%homogenate%%% or a microsomal fraction was passively loaded with 45Ca, and Ca-2+-induced Ca-2+ release was studied by the quick filtration technique. In both preparations, the rate constant of Ca-2+-induced Ca-2+ release decreased 5 and 120 minutes after preconditioning ischemia (%%%homogenate%%% values: 19.7 +- 1.4 and 18.9 +- 0.9 s-1 vs a control value of 25.4 +- 1.7 s-1, P lt .05 in both cases) and recovered after 240 minutes (23.0 +- 1.9 s-1). The Ca-2+ dependence of Ca-2+-induced Ca-2+ release was not affected by preconditioning ischemia. In conclusion, changes in sarcoplasmic reticulum Ca-2+-release channels occur after brief ischemia and %%%reperfusion%%%, are closely correlated with the development of %%%myocardial%%% protection versus sustained ischemia, and might play a role in the pathogenesis of ischemic preconditioning.

10/7/16
DIALOG(R)File 5:Biosis Previews(R)

12114601 BIOSIS NO.: 199497135886
Effect of ischemia and %%%reperfusion%%% on %%%cardiac%%% ryanodine receptors-Sarcoplasmic reticulum Ca-2+ channels
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JOURNAL: Circulation Research 74 (2): p271-280 1994 1994
ISSN: 0009-7330
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We investigated the effect of ischemia and %%%reperfusion%%% on the %%%cardiac%%% ryanodine receptor, which corresponds to the sarcoplasmic reticulum Ca-2+ channel. Isolated working rat hearts were subjected to 10 to 30 minutes of global ischemia, followed or not by %%%reperfusion%%%. Ischemia produced significant reduction in the density of high-affinity 3H-ryanodine binding sites, determined either in whole-%%%heart%%% %%%homogenate%%% (B-max, 220 +- 22, 203 +- 12, and 228 +- 14 fmol/mg protein after 10, 20, and 30 minutes of ischemia versus 298 +- 18 fmol/mg protein in the control condition; P lt .01) or in a fraction enriched in sarcoplasmic reticulum (B-max, 1.08 +- 0.15 pmol/mg protein after 20 minutes of ischemia versus 1.69 +- 0.08 pmol/mg protein in the control condition; P lt .01). The K-%%%d%%% (1.5 +- 0.1 nmol/L) and the Ca-2+ dependence of highaffinity 3H-ryanodine binding were not affected by ischemia. The density of low-affinity 3H-ryanodine binding sites was also reduced after 20 minutes of ischemia (14.0 +- 2.3 versus 34.0 +- 8.2 pmol/mg protein in the sarcoplasmic reticulum fraction, P lt .05), without significant changes in %%%Kd%%% (4.7 +- 1.2 versus 2.4 +- 1.0 mu-mol/L). All these changes persisted after 20 minutes of %%%reperfusion%%%. Analysis of tissue fractions showed that 55% of the ryanodine binding sites were retained in the pellet of a low-speed centrifugation ("nuclear pellet") and that the effects of ischemia concerned only the receptors released in the supernatant ("postnuclear supernatant"). In parallel experiments, we evaluated the effect of ryanodine on oxalate-supported Ca-2+ uptake, which represents sarcoplasmic reticulum Ca-2+ uptake. As expected, we found that high concentrations of ryanodine stimulated Ca-2+ uptake, owing to channel blockade. The response to 900 mu-mol/L ryanodine was slightly reduced in crude %%%homogenate%%% and significantly reduced in postnuclear supernatant obtained from ischemic hearts. In conclusion, the number of ryanodine receptors is reduced after ischemia; this effect concerns a subpopulation of the receptors, persists after %%%reperfusion%%%, and might contribute to modify sarcoplasmic reticulum function.

10/7/17
DIALOG(R)File 5:Biosis Previews(R)

10792137 BIOSIS NO.: 199192037908
OXYGEN RADICALS GENERATED AT REFLOW INDUCE PEROXIDATION OF MEMBRANE LIPIDS IN REPERFUSED HEARTS
AUTHOR: AMBROSIO G (Reprint); FLAHERTY J T; DUILLIO C; TRITTO I; SANTORO G; ELIA P P; CONDORELLI M; CHIARIELLO M
AUTHOR ADDRESS: CATTEDRA DI CARDIOLOGIA, II FACOLTA DI MEDICINA, VIA S PANSINI 5, 80131 NAPLES, ITALY**ITALY
JOURNAL: Journal of Clinical Investigation 87 (6): p2056-2066 1991
ISSN: 0021-9738
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: To test whether generation of oxygen radicals during postischemic %%%reperfusion%%% might promote peroxidation of %%%cardiac%%% membrane lipids, four groups of Langendorff-perfused rabbit hearts were processed at the end of (a) control perfusion (b) 30 min of total global ischemia at 37.degree. C without %%%reperfusion%%%, (c) 30 min of ischemia followed by %%%reperfusion%%% with standard perfusate, (%%%d%%%) 30 min of ischemia followed by %%%reperfusion%%% with the oxygen radical scavenger human recombinant superoxide dismutase (h-SOD). The left ventricle was %%%homogenized%%% and tissue content of malonyldialdehyde (MDA), and end product of lipid peroxidation, was measured on the whole %%%homogenate%%% as well as on various subcellular fractions. %%%Reperfusion%%% was accompanied by a significant increase in MDA content of the whole %%%homogenate%%% and of the fraction enriched in mitochondria and lysosomes. This phenomenon was not observed in hearts subjected to ischemia but not reperfused, and was similarly absent in those hearts which received h-SOD at reflow. Reperfused hearts also had significantly greater levels of conjugated dienes (another marker of lipid peroxidation) in the mitochondrial-lysosomal fraction. Again, this phenomenon did not occur in ischemic hearts treated with h-SOD. Unlike the effect on tissue MDA and conjugated dienes, %%%reperfusion%%% did not significantly stimulate release of MDA in the %%%cardiac%%% effluent. Treatment with h-SOD was also associated with significant improvement in the recovery of %%%cardiac%%% function. In conclusion, these data directly demonstrate that postischemic %%%reperfusion%%% results in enhanced lipid peroxidation of %%%cardiac%%% membranes, which can be blocked by h-SOD, and therefore is most likely secondary to oxygen radical generation at reflow.

10/7/18
DIALOG(R)File 5:Biosis Previews(R)

08770892 BIOSIS NO.: 198784125041
DIFFERENTIAL INACTIVATION OF INOTROPIC AND TOXIC DIGITALIS RECEPTORS IN ISCHEMIC DOG %%%HEART%%% MOLECULAR BASIS OF THE DELETERIOUS EFFECTS OF DIGITALIS
AUTHOR: MAIXENT J-M (Reprint); LELIEVRE L G
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JOURNAL: Journal of Biological Chemistry 262 (26): p12458-12462 1987
ISSN: 0021-9258
DOCUMENT TYPE: Article
RECORD TYPE: Abstract

LANGUAGE: ENGLISH

ABSTRACT: When applied to ischemic hearts digitalis exhibits depressed inotropic effect and increased toxicity. The molecular basis of these effects was investigated at the level of the digitalis receptors characterized by Na,K-ATPase assays and [3H]ouabain-binding measurements. In sarcolemma obtained from dog hearts rendered ischemic for 15, 30, and 60 min (left anterior descending), two populations (high and low affinity) of digitalis receptors were detected. The apparent affinity (%%%KD%%%, 300 nM) and the binding capacity of the low-affinity sites (responsible for toxicity) remained constant and similar to those found in normal hearts. The %%%KD%%% value of the high-affinity sites, "responsible for inotropy," remained unchanged (2 nM), but the site number sharply decreased (up to 90%). These inotropic sites that account for 66% of the total binding in normals are gradually inactivated, as the duration of ischemia increases. This inactivation would occur in situ since it was detectable in %%%homogenates%%% and was not depressed by the isolation procedure per se. The loss of function of the inotropic sites and the increased contribution of the low-affinity toxic sites represent the setting of a new distribution of the digitalis receptors in the ischemic %%%heart%%% before %%%reperfusion%%% is instituted. This constitutes the molecular basis of the deleterious pharmacological effects observed with digitalis.

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DIALOG(R)File 5:Biosis Previews(R)

18982271 BIOSIS NO.: 200600327666
Proapoptotic and antitumor activities of the HMG-CoA reductase inhibitor, lovastatin, against %%%Dalton%%%'s Lymphoma Ascites tumor in mice
AUTHOR: Ajith T A (Reprint); Harikumar K B; Thasna H; Sabu M C; Babitha N V
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JOURNAL: Clinica Chimica Acta 366 (1-2): p322-328 APR 2006 2006
ISSN: 0009-8981
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Background: Diet rich in fat have a clear effect on the tumor incidence in humans. Increased level of lipid peroxidation were found in colon, liver, breast and kidney carcinogenesis. Although the beneficial effects of statins for cardiovascular diseases are well established, their importance in the area of cancer therapeutics has recently gained recognition. Many studies of lovastatin in in vitro systems and experimental animals have been reported as an effective antitumor agent. However, phase I/II clinical trials in cancer patients demonstrated a minor to nonsignificant responses. Hence more studies in different tumor models using doses corresponding to that used to reduce lipid in human are required to support the antitumor activity.Methods: The antitumor activity was evaluated using %%%Daltons%%%' Lymphoma Ascites (DLA) cell line-induced ascites tumor model in mice. Proapoptotic activity was

evaluated in DLA cell line induced ascites animals after the treatment of lovastatin. Apoptosis was analyzed morphologically by staining with Giemsa and biochemically by observing the laddering of DNA in agarose gel electrophoresis. In vitro cytotoxic activity of lovastatin was studied by trypan blue dye exclusion method. Lipid peroxidation inhibiting activity was demonstrated in Fe2+-ascorbate induced rat whole liver %%%homogenate%%%.Results: Lovastatin dose dependently inhibited the ascites tumor growth at 4 and 16 mg/kg body wt (p.o). The percentage increase in life span (%ILS) in the 16 mg/kg treated group was 61.8% (P < 0.01). Single dose of lovastatin (16 mg/kg body wt, p.o) was also effective to accelerate the apoptosis in the ascites tumor bearing mice that was evident from the multiple fragmentation of DNA in gel electrophoresis. Further the morphological analysis of DLA cells aspirated from the lovastatin treated animals showed a significant (P < 0.01) increase of apoptotic cells (15.5 +/- 3%) than the control animals (6.5 +/- 1%). Concentration of lovastatin required for the 50% of the cytotoxicity was 37 5 mu g/ml. Lovastatin at its low concentrations were effective to inhibit lipid peroxidation.Conclusions: The antitumor activity of lovastatin against the ascites tumor is due to its proapoptotic and cytotoxic activities. Lovastatin at low concentrations inhibited Fe2+ induced lipid peroxidation in in vitro system. The proapoptotic and lipid peroxidation inhibiting activities of the lipid lowering drug lovastatin may further suggest its possible therapeutic use as a cancer chemopreventive agent.

13/7/2
DIALOG(R)File 5:Biosis Previews(R)

10710271 BIOSIS NO.: 199191093162
CHARACTERIZATION OF SERUM-STIMULATED LIPOPROTEIN LIPASE FROM BOVINE %%%HEART%%%
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JOURNAL: International Journal of Biochemistry 23 (4): p405-412 1991
ISSN: 0020-711X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: 1. A triglyceride (TG) lipase is present in whole %%%homogenate%%% and tissue extracts of beef myocardium with characteristics of lipoprotein lipase (LPL); i.e. activity is stimulated by serum, inhibited by NaCl and protamine sulfate, the protein binds to heparin-Sepharose, and the enzyme has an alkaline pH optimum. 2. This TG lipase, elutied from heparin-Sepharose at 0.9-1.0 M NaCl, has an apparent mol. wt for 64 K %%%daltons%%%. Its primary mRNA is 3.7 kb. 3. Expression of LPL mRNA and enzyme activities are in the ratio of approximately 20:8:1 for hearts of mouse, rat and beef, respectively and correlate with r = +0.99.

13/7/3
DIALOG(R)File 5:Biosis Previews(R)

06848144 BIOSIS NO.: 198375032087
ISOLATION AND PROPERTIES OF CALCIUM TRANSPORTING GLYCO PROTEIN AND PEPTIDE FROM BEEF %%%HEART%%% MITOCHONDRIA
AUTHOR: MIRONOVA G D (Reprint); SIROTA T V; PRONEVICH L A; TROFIMENKO N V; MIRONOV G P; GRIGORJEV P A; KONDRASHOVA M N
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JOURNAL: Journal of Bioenergetics and Biomembranes 14 (4): p213-226 1982
ISSN: 0145-479X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: The 40,000-%%%dalton%%% glycoprotein and 2000-%%%dalton%%% peptide inducing selective Ca2+-transport through bilayer lipid membranes were isolated from beef %%%heart%%% %%%homogenate%%% and mitochondria. Micromolar concentrations of these substances increased the conductivity of membranes by 3-4 orders. Transmembrane Ca2+ gradient indices an electric potential difference whose magnitude is close to the theoretical for ideal Ca2+ selectivity. The inhibitor of mitochondrial Ca2+ transport, ruthenium red, abolishes both the glycoprotein- and peptide-induced Ca2+ transport in bilayer lipid membranes. Thiol groups essential for Ca2+ transport activity were revealed in the glycoprotein and peptide. Addition of these substances to rat liver mitochondria induces Ca2+-dependent inhibition of the state 3 respiration that can be released by uncouplers (oligomycin-like effect).

13/7/4
DIALOG(R)File 5:Biosis Previews(R)

06203431 BIOSIS NO.: 198171022390
PHOSPHORYLATION OF LOW MOLECULAR WEIGHT PROTEINS IN PURIFIED PREPARATIONS OF RAT %%%HEART%%% SARCOLEMMA AND SARCOPLASMIC RETICULUM
AUTHOR: LAMERS J M J (Reprint); STINIS J T
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JOURNAL: Biochimica et Biophysica Acta 624 (2): p443-459 1980
ISSN: 0006-3002
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: A rat %%%heart%%% sarcolemmal preparation was obtained in which 5'-nucleotidase and adenylate cyclase were enriched .apprx. 9-fold by subjecting a %%%homogenate%%% to a discontinuous sucrose gradient, without the use of a high salt extraction. After incubation of this fraction with Mg[.gamma.-32P]ATP, the majority of 32P incorporated was present in 24,000 and 9000 %%%dalton%%% protein components. Only when a %%%heart%%% cytosol fraction or a purified cyclic AMP dependent protein kinase was added, was enhancement of 32P-incorporation found by addition of cAMP. The 9000 and 24,000 %%%dalton%%% proteins were interconvertible. The degree of conversion could be affected by changing the temperature during solubilization of the membranes in SDS [sodium dodecyl sulfate]

prior to electrophoresis; the 24,000 %%%dalton%%% protein apparently does not correspond to phospholamban, first identified in canine %%%heart%%% sarcoplasmic reticulum. The 24,000 %%%dalton%%% protein was not derived from contaminating myofibrillar troponin I. When the sarcolemmal fraction was preincubated with Ca2+, Mg2+, ATP and oxalate, contaminating sarcoplasmic reticulum vesicles, loaded with calcium oxalate, settled to a greater density in the sucrose gradient. Membrane constituents other than those with enzymatic activity were monitored to confirm the separation between sarcolemmal and sarcoplasmic reticulum membranes: Coomassie blue staining material, sialic acid, cholesterol and phospholipid. The 24,000 and 9000 %%%dalton%%% proteins were equally distributed among the sarcolemmal and sarcoplasmic reticulum fractions present in the sucrose gradient. The rate of 32P-incorporation in the presence of %%%heart%%% cytosol fraction was much slower in the sarcoplasmic reticulum than in the sarcolemmal fraction.

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$290.63 Estimated total session cost 7.265 DialUnits

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